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**P A L E S T I N E :**  
**THE**  
**P H Y S I C A L G E O G R A P H Y**  
**AND**  
**N A T U R A L H I S T O R Y**  
**OF THE**  
**H O L Y L A N D .**

**By JOHN KITTO,**  
**EDITOR OF THE 'PICTORIAL BIBLE'**

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**ILLUSTRATED WITH**  
**ONE HUNDRED AND SEVENTY-ONE WOODCUTS,**  
**BY THE MOST EMINENT ARTISTS.**

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## ERRATA FOR PHYSICAL HISTORY OF PALESTINE.

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- Page cixi, sixth line from bottom, *for Staffud read Staffad.*  
 ,, clxvi and clxvii are improperly printed cxlvi and cxlvii.  
 ,, cxzii, twenty-third line from top, *for Breidanbach read Breidenbach.*  
 ,, cxli, foot-note <sup>a</sup>, *for delphinum read delphinium.*  
 ,, cell, ,, <sup>a</sup>, *for pascocarpa read pterocarpa.*  
 ,, cclxviii ,, <sup>l</sup>, *for bupthalam read buphthalmum.*  
 ,, cclxix, in the name of cut and note <sup>l</sup>, *for Jasmimum read Jasminum.*  
 ,, cclxxx, foot-note <sup>o</sup>, *for buphthalmum read buphthalmum.*  
 ,, cclxxxvi, nineteenth line from bottom, *for Beyraut read Beyrouk.*  
 ,, cclxxxi, foot-note <sup>a</sup>, *for 146 read 147, and for 279 read 299*  
 ,, ,, ,, <sup>b</sup>, *for قارة read فارة*  
 ,, cclxxxliii is erroneously numbered cclxxxii.  
 ,, ccccv, foot-note <sup>d</sup>, *for pheniopterus read pheniopterus.*  
 ,, ccccv, ,, <sup>f</sup>, *for Rallas read Rallus.*  
 ,, ccccxli, ,, <sup>c</sup>, *for cuprimulcus read caprimulcus.*

# ILLUSTRATIONS

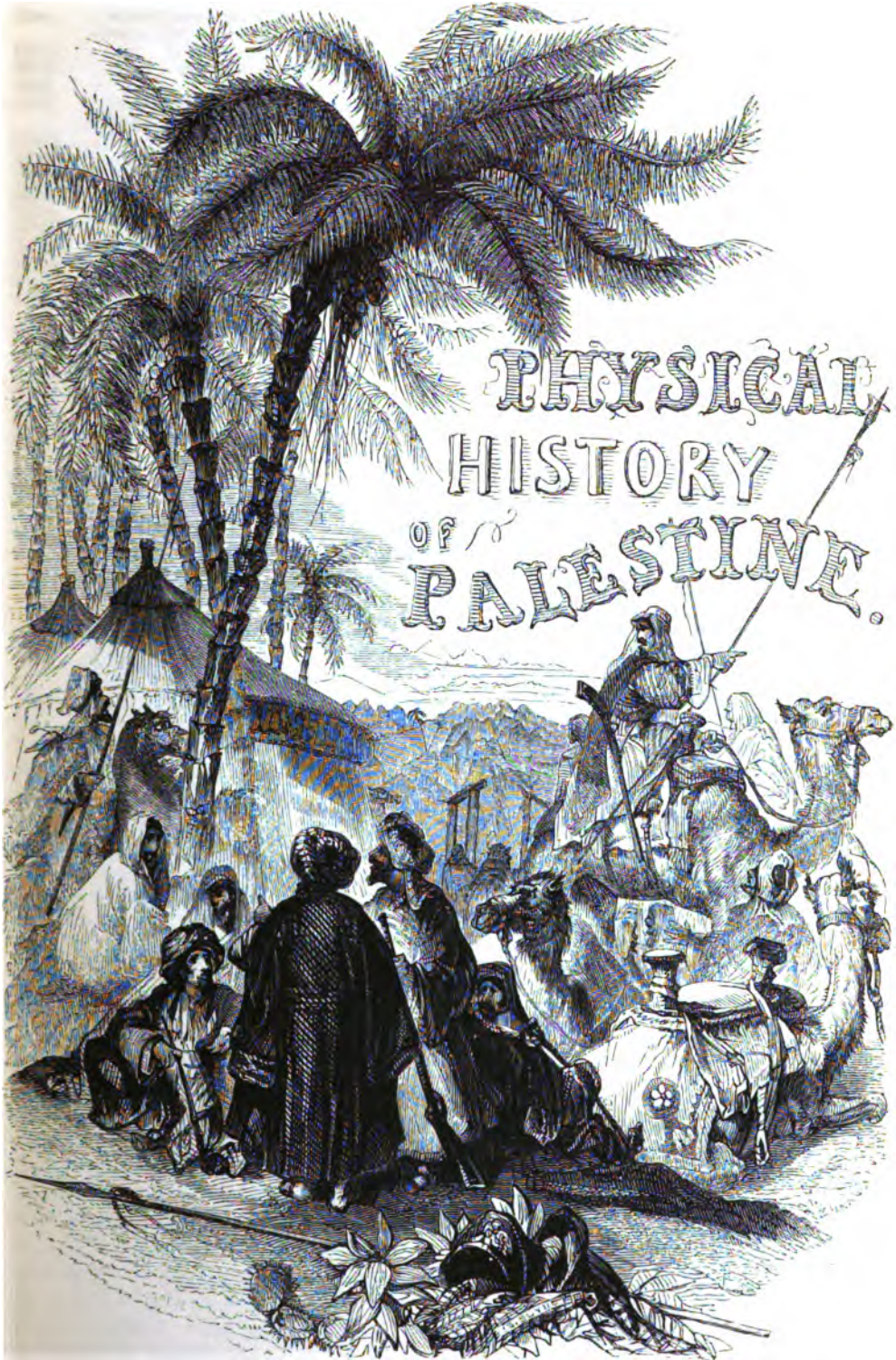
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PHYSICAL  
HISTORY  
OF  
PALESTINE.





# PHYSICAL HISTORY OF PALESTINE.

## CHAPTER I.

### SOURCES OF INFORMATION.



[Bringing First Fruits to Jerusalem.]

IN commencing this portion of our undertaking, we feel it to be one of much interest and very considerable difficulty. Its peculiar interest arises chiefly from the frequent allusions which are made by the sacred writers to the physical characteristics and natural products of Palestine. These allusions do not, in general, so much afford information, as require information in the reader—such information as the inhabitants of the country possessed, and the want of which renders many of the passages which afford such references difficult to understand, or particularly liable to be misunderstood. For, first, the amount of the practical information which might be obtained from the Bible itself is very considerably lessened by the uncertainty which often attends the results of the most laborious or ingenious attempts to determine the species of plants or animals which the Hebrew names denote; and then, our information concerning the natural history of Modern Palestine is meagre and unsatisfactory, to a degree which seems astonishing, when we consider that there is no Asiatic country to which there has

been such large resort of travellers, in all ages, from all parts of Christendom ; and that there is not a country on earth concerning which so many books have been written. But those travellers have been, for the most part, guided by such religious or historical associations as led them to fill their books with descriptions of ruined towns and remarkable places, unmindful that, properly understood, the physical condition of the country, its animal inhabitants, and its vegetable products, furnish a class of Scriptural associations not less interesting than any which even Palestine can offer. But to enjoy these associations, and to be animated by them, required a more intimate knowledge of the Scriptures than most ancient pilgrims and modern travellers have possessed. The utmost that can be obtained from these sources are rare and incidental intimations that such an animal was seen in some particular locality, or that such a plant was found in another. The collection of all such notices that exist might furnish a mass of valuable contributions towards a natural history of Palestine. But to wade through innumerable volumes, in many different languages, to be rarely rewarded with a contributory fact, is a work of such time and labour as none have been willing to undertake ; and therefore *no such history is yet in existence.*

There are indeed many Natural Histories *of the Bible*, the value of which cannot be too highly estimated. They notice all the various natural products, or particular classes of the products, mentioned in the Scriptures : but, since it cannot be imagined that the allusions of the sacred writers refer to all, or to more than a considerable proportion, of the natural products of their countries, such works cannot be regarded as natural histories of Palestine, nor do they indeed profess to be such. The Natural Histories of the Bible form, indeed, a class by themselves, having less connection than any other with the science of nature. They are rather works of criticism than of natural history—rather the productions of philologists than of natural historians. Whatever learning could do on such subjects has been done ; and whatever might be done by science, observation, and well-directed research has been left undone. The process usually taken, in works of this class, has been to exhaust the resources of philology and conjecture, in the attempt to discover the meaning of the Hebrew name, and the object denoted by it. We have already stated that, from the very nature of the thing, the conclusion arrived at is often unsatisfactory or uncertain. But, a conclusion being taken, the ancient writers of Greece and Rome are ransacked to supply the history and description of the object ; and, in particular, to furnish such intimations as might coincide with or illustrate those of the sacred writers. All this was very proper ; but the value of the information thus collected, as *contributory* to a Natural History of Palestine, might have been very greatly enhanced had corroborations and elucidations been sought in the *actual* condition of the country, and the character of its products in the various departments of nature. But this, as we have already shown, would have been a most arduous labour, attended with many disappointments, and has not been executed.

At the very head of the class of writers whose works we have endeavoured to characterise, and, perhaps, the sole original writer on the zoology of the Scriptures which that class contains, stands the eminent name of Samuel Bochart, whose profound learning and prodigious reading enabled him, in his great work, the '*Hierozoicon*,'<sup>a</sup> at once to originate and exhaust his subject, under the mode of treatment which we have described. To this work all subsequent writers on the subject, in their various languages, have been deeply indebted ; and most of them have been satisfied to repeat its conclusions and statements, under forms variously modified and condensed. The immense erudition which Bochart brought to bear on every subject he touched made it appear presumptuous to inquire where he had decided ; and hence the mere fancies and conjectures, with which he too often supplied the absence of facts, and his forced etymologies and doubtful conclusions, have been as implicitly adopted by later writers as any other parts of his extraordinary performance. It thus remains that Bochart is the only great name connected with the zoology of the Bible. (1)<sup>b</sup>

<sup>a</sup> Samuelis Bocharti Hierozoicon, sive de Animalibus S. Scripturæ: recensuit suis Notis adjectis E. F. C. Rosenmüller. Lips. 1793. 3 tomis, 4to.

<sup>b</sup> We take this opportunity of explaining that where a small figure is thus introduced in the text, it refers to a note or supplementary explanation or statement to be found at the end of the chapter. References, and such small notes and elucidations as the text may require, will be disposed of in the usual way, at the foot of the page.

But the *botany* of the Scriptures has offered a subject to more than one original writer; yet not one of them has in this branch of inquiry attained an eminence comparable to that which Bochart reached in another. Their works are comparatively of small extent; nor did any of them, like the author of the '*Hierozoicon*,' so exhaust their subject as to preclude successors and competitors. The principle on which they proceeded was essentially the same as his; but while none excelled and scarcely any equalled him in learning, not one, except Celsius, approached him in that vast and ready erudition which enabled him so profusely and variously to support his views by facts and illustrations from the classical and oriental writers. Another disadvantage under which Biblical botanists have laboured has been, that it is still more difficult to identify the plants than even the animals mentioned in Scripture: so that in this department, even more than in the zoology of the Bible, the reader is perplexed or left unsatisfied by abundance of unsupported conjecture, and by conclusions unwarranted by the premises on which they are founded.

Although the botany of the Bible had not been previously overlooked entirely, the first name of any note in this line of inquiry is that of John Henry Ursinus, whose '*Arboretum Biblicum*'<sup>a</sup> appeared the year before (1663) the first edition of the '*Hierozoicon*' of Bochart. Under the reservation we have stated in reference to the class, this is a learned and useful work; which character applies also, though in a less degree, to the botanical tracts which form about one-half of a second volume in the edition of 1685. These are, '*Sacra Phytologia*,'<sup>b</sup> '*Herbarius Sacer*,' and '*Hortus Aromaticus*.' The first is the most fanciful, and the second is *now* the most useful.

The next Biblical botanist of note is Matthew Hiller, who died (1725) a few months before his able and judicious work, the '*Hierophyticon*,'<sup>c</sup> appeared. This work assumes the form of a commentary on those passages of Scripture in which plants are mentioned. We regard with much satisfaction one short supplementary chapter of this work (chap. xl.), in which the author collects, from various sources, notices of plants actually growing in Palestine. The list is meagre, and the authorities consulted very few. But it suffices to show that Hiller was sensible of the value of such information; and if he had extended his researches in this direction, and allowed the results to influence and guide his larger investigations, he might have produced such a work on Scriptural botany as is still a desideratum in Biblical literature.

But the most distinguished name in this branch of Biblical illustration is undoubtedly that of Olaus Celsius.<sup>d</sup> This distinguished man—whose name may be best known to general readers as that of the patron of Linnæus—appears to us to have treated the branch of inquiry which engaged his attention in a more judicious spirit than had been exhibited in any previous work on any part of the natural history of the Bible. From this we do not except the '*Hierozoicon*;' and if the name of Celsius is less eminent than that of Bochart, it can only be from the more limited range of his inquiries, and the comparatively small size of the work which resulted from them. Celsius—while he equalled any of his predecessors in acquaintance with the materials of illustration which the languages of Greece and Rome supplied, and was exceeded by none in the ready use of the certainly not less valuable information derivable from oriental sources—excelled them all in the intimate knowledge of living nature, whereby he was enabled to identify, with unusual confidence and success, many of the subjects of botany mentioned in ancient writings. He had, moreover, travelled in the East, and was so fully impressed with the importance of the positive facts which only travellers in Palestine could supply, for the elucidation of the natural history of that country, that, although he leans much towards that *learned* mode of investigation which we have already characterised, he gave very unwonted prominence and weight to the facts of this class with which his tolerably extensive reading in books of travel in Palestine had made him acquainted. This combination

<sup>a</sup> Jo. Henr. Ursini Arboretum Biblicum, in quo Arborea et Frutices passim in S. Literis occurrentes, Notis Philologicis, Philologicis, Theologicis, exponuntur et illustrantur. Norimb. 1663, 12mo. This title well expresses the general character of such works. The second work or volume, the tracts contained in which are separately noticed in the text, bears the collective title of '*Historiæ Plantarum Biblicæ*.'

<sup>b</sup> He explains his meaning: '*Sacra Phytologia est descriptio historico—theologica Stirplum Biblicarum ad laudem Creatoris.*'

<sup>c</sup> '*Hierophyticon, sive Commentarius in Loca Scripturæ Sacræ, quæ Plantarum faciunt Mentionem.*' Trajecti ad Rhenum, 1725, 4to.

<sup>d</sup> Olavi Celsii Hierobotanicon, sive de Plantis S. Scripturæ, Dissertationes Breves. Amstel., 1748.



of valuable qualities placed the book of Celsius at the very head of its class, and even now renders it most valuable, not less to the scientific botanist than to the student of the Scriptures.

There is an immense work, the '*Physica Sacra*'<sup>a</sup> of Scheuchzer (\*) in eight folio volumes, enriched by 750 engravings, executed by the first designers and engravers of the day, the costly character of which renders it of difficult access, and scarcely to be seen but in great public libraries. This would seem to throw into the shade all the works we have mentioned. But, although it discusses, and gives a picture of, every matter which can, by any construction, however violent, be forced into a natural history of the Scriptures, it is in reality a very inferior performance, and exhibits so little of judgment, either in the text or plates, and is so lacking in original value (except perhaps in the portions which treat of reptiles and insects), that scarcely any writer refers to it as an authority, although the circumstance, that some of the plates represent subjects not elsewhere engraved, gives the work a certain value to the general naturalist.

The above works in zoology and botany are the stock books from which have been derived the substance of the materials which form the current Natural Histories of the Bible.

And here we may notice two English writers who, although they did not themselves compose Natural Histories of the Bible, have exerted, at least in this country and America, a very salutary influence upon such of these histories as have since their time appeared. These are Harmer and Charles Taylor. The former, in his '*Observations on Various Passages of Scripture*,' started and pursued the idea that many passages in the Bible—an Oriental book—might be explained and illustrated *solely* from the works of travellers in the East. The ingenuity and success with which Harmer applied this principle of explanation recommended it to general attention; and it is not too much to say that, through his own labours, and the more extended application of the principle by others, the Bible is now much better understood than it has been at any time since its authority has been received in distant countries, and rejected in that country where it originated. As it has been the object of Harmer and his followers mainly to illustrate the customs mentioned or alluded to in Scripture, questions of natural history did not obtain a principal, or even a large portion of their attention; and hence the chief value of their labours is to be sought in the principle on which they proceeded, rather than in the actual results of their researches.

Of the various writers who have walked in the path which Harmer may be said to have opened, not one has done so much for the natural history of Scripture, whether in extent, or scientific arrangement, as Mr. Charles Taylor in his '*Fragments*,' appended to his edition of Calmet's '*Dictionary of the Bible*.'<sup>(\*)</sup> These '*Fragments*' embrace a large variety of subjects for the illustration of Scripture, all of them discussed with unusual ingenuity and acuteness, and forming altogether a very interesting collection of facts, and of reasonings upon them. It must, however, be admitted that a great proportion of the facts bear very little reference to the purpose for which they are adduced, and that the conclusions from them are often not to be received without considerable caution. The exuberant fancy of Mr. Taylor led him to find points of illustration in remote analogies with which cooler minds cannot be satisfied, and to build elaborate and often beautiful hypotheses upon foundations far too frail to sustain the superstructure. These observations apply with full force to several of the '*Fragments*,' which discuss disputed points of Scripture natural history; and it is not in these that Taylor's chief service in *this* department of Scriptural illustration is to be sought, but rather in his '*Expository Index referring to Subjects of Science in the Order of the Sacred Books*,' and in his '*Attempt to arrange in a Systematic Order the Natural History of the Sacred Scripture*.' These contain short remarks on most of the subjects of natural history mentioned in the Bible; and they are most truly valuable, although they partake largely in the common faults—that the identifications of existing animals and products with those mentioned in Scripture are often precarious and uncertain, and that, in the search for the ancient products of Palestine, its existing products have not received sufficient attention, so that

<sup>a</sup> '*Physica Sacra, hoc est, Historia Naturalis Bibliæ.*' August. Vindel. 1731—1735. 4 vols. folio. A German edition appeared simultaneously, and translations in French and Dutch soon after the completion of the work. It is sometimes done up in six or even eight volumes. The author was a Swiss physician, who died before the publication of the work was completed.

illustrations have been sought in countries too remote, and too different in climate and situation, to offer satisfactory results. It is indeed surprising, to those who carefully consider this and other works of the same description, how few of the species enumerated and described have been *ascertained* to exist in Palestine.

A Natural History of the Bible forms a considerable portion of a larger work by the Rev. Professor Paxton, first published, in 1819, in two octavo volumes, and enlarged to three in the second edition of 1825. It is entitled 'Illustrations of Scripture,' and, in the main, is a useful and able digest, under distinct heads, of information previously collected by others. This work has no original merit beyond that of arrangement and analysis: for, although the author's reading enabled him to adduce some new facts in illustration of 'Manners and Customs,' the 'Geography' is almost wholly from Bochart's '*Phaleg*;' and in the 'Natural History' the zoological articles are chiefly drawn from the same author's '*Hierozoicon*,' and the botanical from Calmet's Dictionary and Taylor's 'Expository Index.' This part of the work, indeed, only professes to notice the subjects of natural history which are prominently mentioned in the Holy Scriptures.

But the praise of producing the very best work which the English language possesses on the general subject is due to an American, Dr. Thaddeus Mason Harris, whose very able little work, the 'Natural History of the Bible,' has become no less popular in this country than in the United States. The great merit of this book is the clear and satisfactory manner in which it condenses the large masses of facts and reasonings which had gradually accumulated on the various subjects on which it treats, and in the judgment with which conflicting alternatives are balanced, and a position chosen. Yet this excellent judgment being frequently exercised upon imperfect and unsatisfactory materials, the result of the most careful determination is very often inconclusive. The judicious author, having the results of all previous inquiry before him, could not fail to make a better book than any of his predecessors. He has condensed their merits, but has not entirely escaped their defects,—which we have already described as arising from a want of sufficient inquiry into the actual zoology and botany of Palestine. It is so far from true that "he has exhausted all the learning of naturalists *and travellers*,"<sup>a</sup> that in his list of authorities (fifty-one works by forty-two authors) the names of only *three* actual travellers in Palestine occur; these being, Rauwolf, Hasselquist, and Shaw. "*The learning of naturalists and travellers*" is a very remarkable expression; and it is most true that the authors of Natural Histories of the Bible have, more than any others, habitually forgotten that natural history is eminently a practical science—a science of observation; although, in the natural history of such a country as Palestine, philological learning may doubtless be of much service, in guiding some of the naturalist's researches, and in assisting some of his conclusions.

Having thus characterised the labours of the principal writers on the Natural History of the Bible, it remains to inquire what has been done to illustrate the *actual* natural history of Palestine. We have already stated that almost nothing has been formally effected in this matter; and hence the question is rather, what materials for such a history lie dispersed and uncollected in the mass of European literature?—and this may be still further narrowed to the question, what travellers afford the most ample notices of the produce of the country?

The greater number of the older travellers in Palestine were led thither principally or solely by religious motives—being in fact monks and pilgrims, who diligently sought out, and amply described, every spot which was accounted sacred, and who had eyes and hearts for nothing else; and, by minute accounts of that which they had witnessed of this description, to edify and instruct those pious persons who were unable to make similar pilgrimages, was deemed by them the highest honour to which they could aspire, and the most useful service which they could render to their country. Such accounts are far more numerous than is usually imagined, and have for centuries quite exhausted a subject on which, nevertheless, a new book still appears almost every year. Before the happy idea was discovered, that books of travel containing pre-

<sup>a</sup> 'North American Review,' vol. x. p. 92.

cisely the same substantive facts as had already been supplied, times without number, might be made to read differently by minute accounts of the traveller's own reflections and personal adventures,—before this, the wearisome sameness of the books on the Holy Land, numerous as they were, is inconceivable from any examples now offered to our notice. The route was in nearly all cases the same—the places visited and the objects noticed the same—and the accounts of the same things and places were given in as nearly the same form as well could be.

The *earliest* itineraries and descriptions were in general very commendably brief; and their notices of places have a considerable topographical value, from the materials of comparison which they afford, and from the means of identifying doubtful sites which they sometimes supply. But here their use to the present age is at an end. Several of the earliest accounts—that is, those of the ages prior to the Crusades, have been committed to the press by different editors; several in the *Acta Sanctorum* of the Bollandists and of Mabillon. As none of them offer any contributions to the physical history of Palestine, it is not needful that they should in this place receive any further notice.

The Crusades contributed to give the people of Europe a degree of knowledge concerning Palestine, which never existed before, and has not existed since. The letters of the Crusaders to their friends in Europe was one important contribution; while the numbers of warriors and pilgrims who returned to their homes supplied the hearth of the peasant and the shop of the artificer, not less than the hall of the noble, with a living witness and describer, whose accounts of his doings, his marches, his drink, his food, and his manner of life while in the Holy Land, could not fail to include much information regarding the natural condition and characteristics of the country. This also must have been true of the accounts of public transactions, private enterprises, and military operations which were constantly arriving; while the tales and metrical romances founded thereon could not but in some degree contribute to the same result. Indeed, during this age, accounts of the holy “stations,” as they were called, by pilgrims or monks, gave place to accounts of the progress of the “holy war,” or of the more marked episodes which it offered; and although the writers did not formally profess to describe the country, their statements incidentally furnish more information contributory to its physical history than had previously been supplied in any form. They do not indeed often descend to notice particular products; but the notices of the natural aspect of the country, its seasons, and its physical phenomena in such works as the History of William of Tyre, and some of the other pieces in the ‘*Gesta Dei per Francos*’ have a value which has not been duly estimated. One of the writers of this class and age, James de Vitry, who was Bishop of Cesarea (Accon) in Palestine, in the early part of the thirteenth century, does indeed, in his ‘*Historia Orientalis, sive Hierosolymitanæ*,’ give a formal description of the condition of the country, topographical, physical, moral, and religious. The few short chapters on natural history are not very satisfactory or of much importance, nor is their range confined to Palestine; but they are interesting as an instance of attention to a class of subjects which had been generally overlooked.

To about the middle of the same century belongs the very valuable work of Brocard,<sup>a</sup> a German monk, who spent several years in the Holy Land. He resided principally at Acre, from whence he made excursions in all directions. The topographical value of his work is very great, as he saw many towns and villages which have since disappeared, and visited many places to which, until lately, it has been impossible to penetrate. Hence this book was the main stay, after the ‘*Onomasticon*’ of Eusebius and Jerome, of the great Biblical topographers of the 18th century; and Le Clerc even printed it entire at the end of his edition of the work just named. He was a good general observer; and sometimes describes, with so much exactitude and clearness, plants which were strange to him, that they are readily recognised by the botanist, though he does not indicate their names.

<sup>a</sup> ‘*Brocardi Monachi Ordinis Prædicatorum, Descriptio Terræ Sanctæ*.’ Basil, 1555. In biographical accounts he is often confounded with a Dominican monk of the same name, who lived ten years in the convent of Mount Sion, and hence obtained the surname of Brocardus de Monte Sion. Even the ‘*Biographie Universelle*’ makes this mistake. But they were different persons; and our Brocard dedicates his book to the other.

The observations which have been already made, on the general character of the works in Palestine, must be understood to extend down to the latter end of the seventeenth century. They were of what we may call the Pilgrim class of travellers, and the notice which we have taken of them is intended to apply to this extended period. After the Crusades, however, the accounts of the same things became gradually more ample than they had been, and some ingenious persons having introduced the plan of inserting, in their accounts of the several pilgrim "stations," the regular prayers which the Catholic Church had appropriated to these stations, the practice became so largely followed, that for a long time a book without such appendages was of rare occurrence. This was certainly the principal *improvement* which the mass of books received, until the practice for travellers to furnish their accounts in their own language, instead of the Latin, by increasing the number of authors and the size of books, encouraged the development of distinguishing characteristics, while the same general tone and spirit were preserved.

Such works as that which relates the journey to Jerusalem of Anne Cheron, in her eightieth year,<sup>a</sup> demonstrate that even late in the seventeenth century the spirit of pilgrimage still glowed with an ardour which weakness could not discourage or old age chill; and, in the same age, the favour with which Boucher's 'Holy Nosegay' (<sup>c</sup>) was received furnished an intelligible intimation that there were still many hearts on which the most absurdly fanciful emanations of that spirit might operate.

We have now to pass over the wide field which lies before us, in order to point out the works which, among a multitude, appear to furnish some facts towards a physical History of Palestine.

Our attention is, in the first place, agreeably arrested by the imposing expedition of Breydenbach in 1483. With eleven distinguished compatriots,—two friars, skilled in various languages; a Transylvanian archdeacon; Felix Faber, a Dominican, who had already been in the Holy Land, and appears to have been engaged as secretary;<sup>b</sup> and Edward Rewick, a painter of some ability; with a great number of domestics,—the travelling party formed a large caravan. Notwithstanding this promising array, the object of the company was really pilgrimage rather than research; and many such goodly companies of wealthy pilgrims did that age send forth. The party was formed at Mayence, and proceeded to Venice, where it embarked for Palestine. The pilgrims arrived at Jerusalem in July; and after having spent nearly six weeks in visiting all that was remarkable in the city and its environs to the Jordan, the mitigation of the extreme summer heat allowed them, on the 24th of August, to commence their journey across the desert, by Gaza, to Mount Sinai. From thence they returned along the borders of the Gulf of Suez and passed into Egypt; and, after some stay at Cairo, followed the course of the Nile to Rosetta, where they re-embarked for Venice on November 15, but did not arrive at that city till the 8th of January, 1484. We have traced the course of this journey, because it was that which was in that age usually taken by those who extended their pilgrimages to Mount Sinai; but sometimes, indeed, in the reverse order, the journey being *commenced* in Egypt, at Alexandria or Rosetta, and *terminated* at Joppa. The book which was published in 1486 by Breydenbach,<sup>c</sup> was not only one of the very first books of travels submitted to the new invention of printing, but was for a long time the best on its subject which Europe possessed. The aspect of the country was described with care; the more strange of its animal and vegetable products were duly noticed; and, the ground being then comparatively new, the characteristics of the desert between Palestine and Sinai, of the mountains of Horeb and Sinai, and of the country between them and Cairo, were noted with attention and well described. This book may, upon the whole, be regarded as one of the most respectable and judicious productions of its age, and, as compared with others, it supports the character of a work in the production of which several able travellers co-operated.

<sup>a</sup> 'Relation du Voyage d'Anne Cheron, âgée de quatre-vingts ans, à Jerusalem.' Paris, 1671.

<sup>b</sup> An account of Faber's previous journey is in existence; and the German copy of the account of this other journey bears his name. It is very likely that this monk, who knew the Holy Land better than any of the party, wrote the account which goes under the name of Breydenbach, the leader of the expedition.

<sup>c</sup> 'Beruh. de Breydenbach Opus transmarinæ Peregrinationis ad venerandū et gloriosum Sepulchrū dominicū in Jherusalē. Mogunt., 1486.

This work at once took the first rank in its class. It was translated into most European languages, and remained for a long time the standard book, from which smaller travellers supplied their own deficiencies freely. Its wealth sufficed to enrich scores of them. It had scarcely appeared, before Nicole le Huen, who was about to publish a small history of the Crusades, translated into French many passages of the first part, being that which concerns the Holy Land; and the whole of the second part, being the journey to Sinai and Egypt; and from this, with the help of his own observations in the first part, (for he also had been to Jerusalem,) he prepared 'Le Grant Voyage de Hierusalem,' 1487, which occupies as much space as the history to which it is prefixed. Le Huen acknowledged that the second part of this portion was taken from Breydenbach, and that he had been himself unable to visit Mount Sinai: he is more reserved as to the extent of his obligations in the first part, which offers a well-digested description of the Land of Promise; and, taking it altogether, 'Le Grant Voyage' is a very valuable performance, which concurred, with the separate work of Breydenbach, in exercising a useful influence upon the best travellers of a later day.

We shall now class, according to the languages in which they wrote, such other travellers as appear to us to have taken a wider view than the mass of them did of the country through which they travelled, and who, while the sacred places were the chief objects of their attention, were not entirely unobservant of the physical characteristics of the districts through which they passed, nor quite neglected to record the presence of such natural products as occurred conspicuously to their notice.

The Latin Itineraries and Peregrinations claim the first attention. They are very numerous, and, for the most part, satisfactorily brief. The greater part of them are written by monks, and are utterly barren of information, except as regards the holy stations, which exception involves, in some of them, the incidental merit of being useful for topographical purposes. Those travellers, writing in Latin, who kept their attention awake to subjects of general interest, and who in consequence furnish some contributions towards the physical history of Palestine, were almost exclusively laymen, as will appear when we mention the names of Baumgarten<sup>a</sup> (1507),<sup>b</sup> Furer<sup>c</sup> (1565), Prince Radzivil<sup>d</sup> (1580), and Cotovic<sup>e</sup> (1598): the work of the last-named traveller is a closely-printed volume, replete with all kinds of information, among which some useful facts in physical history may be found, although not in an adequate proportion.

The Spaniards have several books of travels in Palestine; but we have not met with any which are other than markedly devotional pilgrimages. Of those which we have seen, the fine book of Castillo<sup>f</sup> (1627) seems the best of its own class; but it may be examined in vain for such information as we are seeking. A much earlier work, *written* in 1526, by Fra. Antonio Medina, is remarkable, in the Italian translation,<sup>g</sup> which only we have been able to see, for a profusion of coarse wood-cuts, exhibiting a great number of buildings and monuments in the Holy Land, of many of which we know not that any other representations exist.

We know not what books on Palestine the Portuguese have, besides the Itinerary of Pantaliam d'Aveyro,<sup>h</sup> which, judging from the number of editions through which it has passed, appears to be held by them in high esteem. It must, upon the whole, be classed with the books of devotional pilgrimage, though containing more of general information than books of that class usually afford. For the time it was a good book; but its goodness is not of the sort for which we inquire, although the author sometimes notices fruits and products which he saw in cultivation.

The greater part of the Italian books which we have seen follow the established routine of

<sup>a</sup> The dates inserted in parentheses in the text are the dates of the journey. The dates of publication are given with the titles in the following notes: these last are in general transcribed from our own copies of the several works; but when there have been more than one edition, and ours is not the first, we have, when in our power, inserted the date of the first edition.

<sup>b</sup> 'Martini à Baumgarten in Braitenbach, Peregrinatio in Ægyptum, Arabiam, Palaestinam, et Syriam.' Norib., 1504.

<sup>c</sup> Christ. Fureri ab Halmendorf, Itinerarium Ægypti, Arabiæ, Palaestine, aliarumque Regionem Orientalium.' Norim., 1521.

<sup>d</sup> Hierosolymitana Peregrinatio Illustratissimi Principis N. C. Radzivilii. Antverpiæ, 1614.

<sup>e</sup> 'Itinerarium Hierosolymitanum et Syriacum; Auctore Joanne Cotovico.' Antwerp, 1619.

<sup>f</sup> 'El Devoto Peregrino y Viage de Tierra Santa.' Por el M. R. Padre F. Ant. del Castillo. Madrid. 1656.

<sup>g</sup> 'Viaggio di Terra Santa, con sue Stazioni e Misterii.' Firenze, 1590.

<sup>h</sup> 'Itinerario da Terra Sancta, e suas Particularidades.' Lisb., 1593.

devotional pilgrimage. The book of Zuallart,<sup>a</sup> (*Ital.* Zuallardo) gives a good general account of the country, with some interesting notices of its products and physical characteristics. The French edition, published about twenty years after, by the author himself, in Flanders, his native country, is a very superior work to the Italian edition, being enriched by many interesting investigations, and by the results of a very extensive and judicious course of reading in all kinds of ancient writers, classical or Christian, from whom any information could be derived. In this form it became a most useful performance—a sterling work, which takes place at the head, in point of time, of what we may call the Historical travellers. Besides, the work is enriched by a great number of very neat copper-plate engravings of sites, buildings and plans, which continued for more than a century to be freely copied by other writers. Indeed, the author's countryman, Cotovic, already mentioned, whose book was published only eleven years after in the same town (Antwerp) as the first French edition of Zuallart, copied the whole of the plates, and was not much more scrupulous in his literary appropriation.

The next work in Italian that seems to require a notice is the 'Pilgrimage of Don Aquilante Rochetta'<sup>b</sup> (1598), a decent book of travel, from which some notices of the face of the country may be gleaned, but which says little of its animal or vegetable products. The portion of Pietro della Valle's (1616)<sup>c</sup> general travels which relates to Palestine, is, though brief, of considerable value. The Italian Jesuit Dandini,<sup>d</sup> who, in 1599, was sent to Mount Lebanon on a mission to the Maronite patriarch, gives some chapters of useful information concerning that region, although the principal object of his book was to furnish an account of the customs and doctrines of the Maronites.

The French language, while it abounds in works on Palestine, of the class which we have so often described as being the most common, offers many valuable old books, which have been strangely overlooked by those who have written on the physical characteristics of Palestine, and the natural history of the Scriptures. Indeed, it is quite safe to say, that some of the old French writers give far better accounts of the country generally than could at the same time be found in any other language, and far more solid and satisfactory than most of the more recent accounts which have in any language been supplied: and had those works been much known in this country, or even in France, not a few modern travellers in Palestine would have hesitated to think it in their power to add to the long-existing information concerning that country; and it may be found that the real additions to previous information which even the best of them offer might in general be reduced to a very few pages indeed.

The first book which we have met with is that of La Huen, which we have had occasion to mention in noticing Breydenbach. Though in the main little more than a compilation, modified by some matter which the author's own travels enabled him to supply, it seems to have offered a model which some of the most judicious writers of later date copied with improvement and success. These writers generally digested their information under convenient and proper heads, and undertook to give a complete view of the country, and of its then inhabitants, whose manners, customs, and religious tenets are often very satisfactorily described. The physical aspect of the country, and of its particular parts, is generally stated, and its animal and vegetable products are not entirely overlooked, although occasion may be found to regret that these most important parts of the subject fail to obtain a proportionate measure of attention.

One of the first and best writers of this class was Eugene Roger,<sup>e</sup> a missionary monk, whose work embodies the materials collected during a residence of five years in Palestine. After a rapid general view of the country and its products, the territory of each of the Jewish tribes is taken in turn, and everything remarkable in it is carefully described. This occupies

<sup>a</sup> 'Divotissimo Viaggio di Gerusalemme, fatto e descritto da Giovanni Zuallardo, l'anno 1586, con disegni di varii luoghi di Terra Santa, intagliati di Natale Bonifacio.' Roma, 1587.

<sup>b</sup> 'Peregrinatione di Terra Santa e d'altre Provincie, di Don A. Rochetta.' Palermo, 1630.

<sup>c</sup> 'Viaggi di Pietro della Valle il Pellegrino, descritti in lettere familiari al suo amico M. Schipano, scritti dall' anno 1614 fin'al 1626.' Roma, 1650.

<sup>d</sup> 'Missione Apostolica al Patriarca e Maroniti del Monte Libano.' 1656.

<sup>e</sup> 'La Terre Sainte; ou Description Topographique, tres particuliere des saints Lieux, et de la Terre de Promission.' Paris, 1646.

the first book; the second is devoted to manners and opinions. Doubdan (1652)<sup>a</sup> may be allowed to take rank with the best French travellers; but although his descriptions of the holy places are very minute, clear, and trustworthy, he is not, in the point of view we are taking, by any means entitled to that pre-eminence which Chateaubriand seems disposed to assign to him. Another favourite of his, Des Hayes,<sup>b</sup> has little to say concerning Palestine; and that little, though exact, does not appear to us of very distinguished value. M. de Monconys,<sup>c</sup> in a small portion of a larger work, makes some useful contributions to our knowledge of Palestine. His book was one of no common pretension, as will appear from its title, which, on account of its curiousness, we give at length below; and although there is in this author much of puerility and conceit, and his general character as a traveller does not *now* stand very high, he certainly was (at least in Palestine) an attentive observer of nature, and hence he often gives more really valuable information in a few pages than others do in volumes. Every day he was careful to note the physical characteristics of his route, and few things in the animal or vegetable world were allowed to escape his attention. In his case we have singular cause to regret that his journey in Palestine was made during the winter, and that his account of it is so short.

The statement we have before made concerning Zuallart shows that, although, for the sake of uniform classification, we have placed him among the writers in Italian, he would with more real propriety be put among the French travellers. Very similar in plan to his French edition is the excellent work of Nau<sup>d</sup> (1674) the Jesuit, to whom we are inclined to assign the first place among the *historical* travellers. We think that while he excels all others in the success with which his diligence and various erudition enables him to bring together the incidental notices which may be found, in ancient accounts and histories, of the various places to which his statements refer, he is little inferior to the very best of them in his descriptions, from which a considerable number of useful facts contributory to a physical history of the country may be obtained.

Benard<sup>e</sup> (1616) we have seen mentioned with more respect than he had seemed to us to claim; but, on recurring to his book, we perceive that he may be allowed a place in this list, in virtue of the notice which he takes of the produce of gardens and cultivated grounds.

The work of Surius<sup>f</sup> (1644—47) is more worthily distinguished from the common run of books on Palestine than its title would lead one to expect. It is divided into three parts, under the quaint titles of *Le Pèlerin Voyageant*, *Le Pèlerin Séjournant*, and *Le Pèlerin Rétournant*; the second of which, though chiefly occupied with accounts of the sacred places, takes some notice of the natural characteristics of the country, which the author had ample opportunities of observing.

The portion of his book of general travel which Thevenot (1657)<sup>g</sup> devotes to Palestine, though necessarily not extensive, is every way worthy of his high reputation, as one of the most instructive travellers of his own age or any other. It is indeed quite a refreshment to meet with him in the somewhat dreary assemblage of travellers in the Holy Land. He was a man of scientific education, and a gentleman; and while his chief attention is engaged by the customs and institutions of the people among whom he passes, he is far from inattentive to the aspect of the country, and is careful to notice the vegetable products which, at the season of his journey, were in fruit or flower.

That accomplished gentleman, the Chevalier d'Arvieux<sup>h</sup> (1660), deserves most honourable

<sup>a</sup> 'Voyage de la Terre Sainte, contenant une véritable description des lieux les plus considérables que Notre Seigneur a sanctifiés de sa présence, prédications, morale et souffrances, &c. &c.' Paris, 1657.

<sup>b</sup> 'Voyage de Levant; fait par le Commandement du Roi, en l'année 1621, par Le Sr. D. C.' Paris, 1629; second edition.

<sup>c</sup> 'Journal des Voyages de Monsieur de Monconys; où les Sçavants trouveront un nombre infini de nouveautés, en Machines de Mathématique, Expériences Physique, Raisonnemens de la belle Philosophie, curiosités de Chymie, et conversations des Illustres de ce Siècle; Outre la description de divers Animaux et Plantes rares, plusieurs secrets inconnus pour le Plaisir et le Santé, les Ouvrages des Peintures fameux, les Coûtumes et Mœurs des Nations, et ce qu'il y a de plus digne de la connoissance d'un honnête Homme dans les trois Parties du Monde.' Lyon, 1665.

<sup>d</sup> 'Voyage Nouveau de la Terre Sainte.' Paris, 1744.

<sup>e</sup> 'Le Voyage de Hierusalem.' Par le Sr. Benard, Parisien. Paris, 1621.

<sup>f</sup> 'Le Pieux Pèlerin, ou Voyage de Jerusalem.' Brus., 1666.

<sup>g</sup> 'Relation d'un Voyage fait au Levant.' Par. 1664-74.

<sup>h</sup> 'Mémoires du Chev. d'Arvieux. Par Jean Baptist Labat., Paris, 1735. The second volume contains the travels in Palestine; the third gives a singularly interesting account of d'Arvieux's sojourn among the Arabs of Carmel.

mention. He resided with the French consul at Sidon (Seide), and acquired an intimate acquaintance with the languages and manners of the people, during some years before he traversed the country. He travelled the whole length and breadth of Syria, and gave the European world more extended and clear ideas concerning it than had previously been entertained, or than were superseded till the time of Volney, if then. His geographical observations and views of the face of the country are truly valuable, coming, as they do, from a well-instructed mind, and being therefore refreshing to one who has hitherto had to trace little more than the hap-hazard remarks of ignorant pilgrims and monks. His observations in natural history, in the restricted sense, are not numerous, being confined to some of the principal productions.

The next traveller, in point of time, who requires to be noticed, is La Roque<sup>a</sup> (1688), whose superior account of Mount Lebanon, its productions and inhabitants, superseded the comparatively meagre account given by Dandini, and continued to bear the character of supplying the best account of this interesting region which Europe possessed, till in its turn superseded by Volney. Some of its information is still valuable.

But none of the works which we have mentioned seem to us comparable, on the whole, to that of Morison<sup>b</sup> (1698). Some exceed it in erudition, many in minuteness of detail, and one or two in geographical description; but as a general account of all that is note-worthy, and as combining in just proportions the best qualities of a good and solid book of travels, this work stood alone in its own day, and has not been exceeded, if equalled, since.

The German travellers in Palestine were subject to the general influences which operated upon pilgrims of other nations; but they were the first to free themselves from the bondage of routine pilgrimage, and to offer to the public really profitable information concerning the Holy Land. Breydenbach, whom we have already mentioned with commendation, was a German; and the first person who visited Palestine for the purpose of collecting information concerning its natural history was of the same nation. This was Leonhart Rauwolff,<sup>c</sup> whom we shall presently have further occasion to mention. It is unhappily so difficult in this country to collect old German books, or to obtain clear information concerning them, that we are by no means confident that there may not be many more than we are now prepared to mention, which afford such information as a writer on the Physical History of Palestine would desire to obtain. That in this, as in other cases, we only mention such works as we have seen, and that those mentioned throughout the present chapter is but a selection, for a specific purpose, of a much larger number which we have examined, will account for the absence of a vast number of names and titles which the reader may find in the catalogues of Pinkerton and De la Richarderie.

It will be remembered that the authors of much the greater portion of the Latin Itineraries, with which we commenced this notice, were Germans; and the German nation must take the credit of whatever praise has been ascribed to them.

In connection with this subject, the most conspicuous matter that comes under our notice is a thick and closely-printed German folio volume of a thousand pages, bearing the date of 1659, and consisting entirely of travels in Palestine, by Germans, twenty-one in number. They are printed entire, and the dates of travel range from the middle of the 13th to the beginning of the 17th century. A few of them are translations from some of the Latin Itineraries by Germans, which we have had occasion to notice. We doubt that any other country could produce a collection of travels in the Holy Land, so creditable as this to the character of its earlier travellers. There are few articles in this curious collection from which something useful to the inquirer into the physical history of Palestine may not be gleaned. Those of the number who offer the most numerous and valuable contributions are, Steffans Von Gumpenberg<sup>d</sup> (1449), Johann Tucher<sup>e</sup> (1479), Johann, Count of Solms<sup>f</sup> (1483), who was one of the

<sup>a</sup> ' Voyage de Syrie et du Mont Liban: contenant la Description de tout le Pays compris sous le Nom de Liban et d'Anti-Liban, Kesraon, &c.' Paris, 1722.

<sup>b</sup> ' Relation Historique d'un Voyage nouvellement fait au Mont de Sinai, et à Jerusalem.' Toul., 1704.

<sup>c</sup> ' Beschreibung der Reise in die Morgenlander fürnehmlich Syriam, Judeam, Arabiam, &c.' Augs. 1561. This, the original edition, has a number of figures of plants, which have not been copied into the translation published by Ray.

<sup>d</sup> ' Beschreibung der Meerfahrt in das Heilige Landt.' Frank., 1561.

<sup>e</sup> ' Reise-beschreibung zum Heilige Grabe.' Aug. 1483.

<sup>f</sup> ' Reise ins Heilige Landt und zum berg Sinai.'



Breydenbach party. Daniel Ecklin<sup>a</sup> (1552), Jacob Wormbser<sup>b</sup> (1561), Hanns Helffrich<sup>c</sup> (1565), and Solomon Schweigger<sup>d</sup> (1576). Besides these, there are many other travellers of the period under consideration, which this collection does not include, but who furnish intimations, more or less frequent and valuable, concerning the face of the country, its climate, seasons, and vegetable products—we had almost said ‘animal’ also; but it is a remarkable fact, that, by German as well as by other travellers, far more attention has been given to the botany than to the zoology of the Promised Land. These travellers are, Breuning<sup>e</sup> (1571), Tschudis von Glarus<sup>f</sup> (1606), Troilo<sup>g</sup> (1667), Otto von der Gröben<sup>h</sup> (1675), and Myrike<sup>i</sup> (1684). The first named of these regarded, with more attention than most other travellers of his time, the animals, new to him, which came under his notice; and several very tolerable figures are given. But, unhappily, his observations of this class are more frequent and detailed in Egypt and Arabia than in Syria; or rather, by the time he reached Palestine, most of the animals he saw had ceased to be new to him, and he seldom felt the necessity of noticing the mere presence in Palestine of creatures which elsewhere had already been particularly noticed. Troilo, though not professedly more of a naturalist than other travellers of his time, is more than usually particular in his attention to those objects which do engage his notice.

Journeys to Palestine were hardly to be expected in the 16th and 17th centuries from the Dutch. Their form of religion left them no zeal to visit the holy places; and they were too much troubled, or too much engaged in war or maritime traffic, to have leisure to journey for science or pleasure. We do not know that more than two or three Dutch books of travel in the Holy Land occur before the 18th century, and these we have not been able to obtain. Holland did, however, produce one valuable singularity regarding Palestine which requires to be mentioned. Dr. Olfert Dapper employed his leisure in embodying all existing information concerning various foreign countries into connected accounts of them. The result of his labours is exhibited in eight or nine substantial folios, illustrated with a vast number of very superior engravings. One of the largest of these volumes is entirely devoted to Syria and Palestine,<sup>k</sup> being, as far as we know, the most extensive single account of the Holy Land which even yet exists in any language. As a compilation, its value, of course, arises from the immense number of statements which it brings together, from authors whose productions are now forgotten or not easy of access. Dapper always faithfully reports his authorities, and annexes their names to the statements for which they are responsible: but he leaves it to his reader to exercise a discretion which he wanted; as he sometimes adduces authorities of no great value, and whose inaccuracies a little of that critical tact which he entirely wanted might have enabled him to discover. As it is, his great book is valuable or not, according to the hands into which it comes.

It would almost seem as if the Dutch, towards the close of the 17th century, had become desirous to clear themselves in the eyes of Europe for their previous neglect of the Holy Land, by throwing into the scale a few enormous and splendid volumes, which in costliness and physical ponderosity might overpoise a score of such comparatively small and humble works as other European nations had previously contributed. Dapper's great book was something; but being a compilation, its claims were of a questionable sort. They soon, therefore, followed with an original traveller, in a volume much more bulky and far more splendid than any which had previously appeared. This was the great work of Cornelius van Bruyn,<sup>l</sup> a talented painter, who, as he travelled, employed his pencil with great activity and skill; and was hence enabled to supply numerous engravings of objects never before, and many of them never since, represented. But this is the chief merit of his work, the literary claims of which are not commensurate with the pictorial. His subjects for remark are, indeed, very generally well

<sup>a</sup> ‘Reise zum Helliger Grab.’ Colon, 1590.

<sup>b</sup> ‘Reise ins Hellige Land und im Egypten.’ Frank., 1609.

<sup>c</sup> ‘Reise nach Hierusalem, Ägypten und dem Berg Sinai.’ Leip., 1579.

<sup>d</sup> ‘Newe Reis-beschreibung aus Teutschland nach Constantnopol und Jerusalem.’ Norim., 1608.

<sup>e</sup> ‘Orientalische Reise in die Turkie.’ Stras., 1612.

<sup>f</sup> ‘Reyse und Bilgerfahrt zum Heiligen Grab.’ Rohr., 1606.

<sup>g</sup> ‘Orientalische Reisebeschreibung.’ Marien., 1694.

<sup>h</sup> ‘Orientalische Reisebeschreibung.’ Dreed., 1676.

<sup>i</sup> ‘Reis nach Jerusalem und dem Lande Canaan.’ Onabr., 1714.

<sup>k</sup> ‘Naukerige Beschryving van gantsch Syrie en Palestyn of Hellige Lant, &c.’ Amst., 1680.

<sup>l</sup> Better, perhaps, known by the Frenchified name of Cornelle de Bruin. The title of his book is ‘Reysen door den Levant in de Vermaardste deelen van Klein-Asien, Scio, Rhodes, Cyprus, Ägypten, Syrien en Palestina.’ Delft, 1699.

chosen, but the remarks themselves are seldom very solid, and often inaccurate. On subjects of natural history, there are, however, many useful observations and some engravings. And if the general merits of Bruyn suffer, it is rather from comparison with the travellers who came after him, than with those who preceded; and this comparison is not a very fair one to make. But if he had followed a Chardin in Palestine as he did in Persia, even a retrospective comparison could not have been to his advantage.

The contributions of English travellers, previously to the 18th century, to our knowledge of Palestine, were in no respect considerable. Some small accounts by English travellers may be found in Hakluyt and Purchas; but the only names of note which connect themselves with the Holy Land are those of Sandys<sup>a</sup> (1610), and Maundrell<sup>b</sup> (1697). The view which the former took had the larger scope, and offers some interesting though rather indistinct glimpses of the natural aspect of particular points, and of the products which they offered. Maundrell's object was limited to a view of the holy places, of which he furnishes an account so intelligent and perspicuous, that his still remains the standard description in the English language, and is scarcely rivalled in any other. The book is a model of its kind; and though it contributes but few facts to the physical history of the country, these few are valuable.

In thus enumerating the writers on Palestine, prior to the commencement of the 18th century, whose works do, more or less, offer facts contributory to the physical history of the country, we have been mainly influenced by the wish to show that there exist mines of information which appear to have been unknown, and which have certainly never been explored, by those who might have most advantageously employed the facts which they offered. We are assuredly not disposed to exaggerate the importance of these facts: none can have had more cause than ourselves to feel the inadequacy of *all* existing materials. But the very dearth of adequate materials does all the more enhance the importance of those which may be collected from such sources as we have indicated; and we are satisfied that these, together with the other better known sources of information, supply matter for such a view of the natural condition of this interesting country as no writer has yet offered to the public, or even attempted to produce.

We have brought down this enumeration to a very convenient point; for from about the end of the 17th century a manifest change of character is observable in the books of travel in Palestine. This is easily accounted for. In Catholic countries the public possessed such ample accounts of the Holy Land, and particularly of its sacred places, in which they were most interested, that nothing further was felt to be needed, or found adequate encouragement. Indeed there are manifest signs in some of the later works of the period, that they were put forth by their authors chiefly with the view of recommending themselves to the notice and patronage of their superiors in the church. Hence the field was abandoned—enough had been done;—and the whole 18th century did not produce more than one or two works of any note by Catholic travellers in Palestine.

On the other hand, at this very juncture, when the subject began to be dropped by Catholics as one which they had exhausted, it was taken up by Protestants with all the ardour with which men take up a matter which seems to them new, and which really becomes new in their hands, under the changed medium through which it is viewed, and the fresh class of feelings with which it is examined. The Reformation, by teaching that pilgrimages had no saving merit before God, nor any necessary influence in bringing the soul nearer to Him, withdrew from a part of Europe the great motive which had made the Holy Land a place of concourse for "pilgrim feet" from all parts of Christendom. In this, as in other matters,—and from the natural operation of the principle of antagonism,—the practical feeling went far beyond the abstract doctrine: the doctrine only taught that pilgrimages were unprofitable, but the actual feeling, in the first times of the Reformation, was, that they were little less than sinful; and seeing that the Holy Land still continued to be resorted to by Catholic pilgrims, journeys to Palestine were avoided by Protestants, lest they should be supposed to be influenced by the same class of feelings and opinions. Hence, an interval of nearly two centuries had produced

<sup>a</sup> 'A Relation of a Journey begun An. Dom. 1610.' Lond. 1632. 3rd edit.

<sup>b</sup> 'Journey from Aleppo to Jerusalem.' Oxon., 1707.

a dearth of information concerning Palestine, singularly in contrast with its redundancy in Catholic countries. This want began to be felt at the time we have indicated; and when the lapse of several generations had removed all fear of misconception, by softening the first ardour of opposition to Catholic practices, even in things indifferent, it began to be felt that a Protestant need be none the worse for a journey to Palestine, or even for visiting the places accounted holy; while many clearly saw that valuable materials for the elucidation of the Scriptures might be drawn from the country in which the writers lived, and the characteristics of which influenced their allusions and the forms in which their ideas were conveyed. The tide thus turned: and, from that time to this, the mass of writings on Palestine have been furnished by Protestants, who have now produced works as numerous and diversified as those which the Catholics had previously possessed.

This new class of travellers to Palestine were clearly distinguishable from the mass of their Catholic predecessors. They gave less exclusive attention to, and furnish less detailed accounts of the sacred places, and the feelings which they connect with them are less enthusiastic,—and this, because the Protestant saw cause to doubt much which the Catholic entirely believed, and stopped to inquire where the Catholic allowed himself only to feel. We find more freedom of investigation, and greater breadth of view: but, seeing that none of these later travellers spent more than a few weeks in a country where many of their predecessors resided for years, they are comparatively superficial on those points to which the latter had been accustomed to attend. Some of these works are invaluable for their clear and graphic descriptions; others for their inquiries concerning sites and accounts of ruins; some for making us acquainted with districts not in former times explored; many for accurate accounts of the manners and customs of the present inhabitants; and a few for their notices of the physical condition and natural products of the country: but, speaking of the mass, it is a great and growing evil that these books tell us less of Palestine than of the traveller and his impressions—less of the country than of his adventures in it, and of the people with whom he has to do.

We may now proceed to mention those among these later writers whose labours have, in any considerable degree, made us better acquainted with the physical history of Palestine.

In the 18th century the Italian language offered a valuable contribution to our knowledge of Palestine in the travels of the Abate Mariti.<sup>a</sup> Half of the work is occupied with the tale of Cyprus, of which it offers the best account we possess: the other half is devoted to Syria and Palestine, and through the judicious abstinence of the author from such details as are a hundred times repeated by the older travellers, this portion of Mariti's work offers a much larger quantity of new matter than its comparatively limited extent might lead one to expect. It includes, indeed, a somewhat unsatisfactory history of Jerusalem; but he gives a very good account of the different people inhabiting Syria and Palestine, and the descriptive parts contain a larger number of clear and trustworthy statements concerning the products and physical aspects of Palestine, than are often afforded by any single traveller.

Two very eminent French writers, Chateaubriand<sup>b</sup> (1806), and Lamartine,<sup>c</sup> have, in our own day, increased their reputation by the respective accounts of their travels in Palestine. It seems to have been their intention to evoke the spirit of the old pilgrim travellers, and reproduce it to the world in a form more beautiful and more refined than any in which it has been hitherto seen. The attempt was so far successful, that works were produced which, for their very eloquent and beautiful language, their fine sentiments and animated descriptions, will always be read with pleasure. But they add almost nothing to our real knowledge of the country, and can never be referred to as of any original authority or value. The same may be said, still more strongly, of the only English traveller in Palestine by whom a similar style of composition has been attempted.

We have introduced the names of Chateaubriand and Lamartine, more on account of their eminence than from their being connected with the present inquiry. The case is very different with respect to their countryman and immediate predecessor, Volney,<sup>d</sup> who, about fifty years

<sup>a</sup> 'Viaggio dell' Abate Mariti per Isola di Cipro per la Siria e la Palestina, &c., dell' anno 1760 al 1768.' Turin, 1769.

<sup>b</sup> 'Itinéraire de Paris à Jérusalem.' 1812.

<sup>c</sup> 'Souvenirs pendant un Voyage en Orient.'

<sup>d</sup> 'Voyage en Syrie et en Egypte, en 1783, 1784, et 1785.' Paris. 2 vols., 8vo., 1800. Third edit.

ago, presented to the public the only original account of the physical characteristics of the country (as included in Syria) which has ever yet been offered to the public with any pretensions to completeness. This work has none of the minute descriptions of places, or details of personal adventure and accommodation, which, together or apart, fill up most of the books on the country; but is an excellent digest of observations made and information collected during a residence of three years in Egypt and Syria. The sceptical opinions for which the author was afterwards noted scarcely appear in this performance, which contains not only the *best* general account of Syria and its inhabitants, but the *only* connected view of what may be called its physical geography.

The German travellers of the 18th century, though not very numerous, maintain the respectable relative rank which they had previously assumed. Korten<sup>a</sup> supplies a considerable number of valuable facts concerning the physical geography and natural products of Palestine. The later work of Schulz<sup>b</sup> and its value is sufficiently indicated when we state, that to it the German writers, and Malte Brun, most frequently refer for information concerning the physical geography of Palestine. Niebuhr, although a Dane, must be classed as a German traveller. His reputation is too well understood to require explanation. But as Arabia was the country of his destination, and in which his real fame was won, his passage through Palestine was only an incident. Yet, even in passing, such a true traveller as Niebuhr could not fail to distinguish himself from the common run of travellers in Palestine; and accordingly the comparatively small space which he allows to the subject is marked by the soundness and practical value of its contents.

In the present century, the leading German name is that of Seetzen, the worthy predecessor of Burckhardt. In the years 1805, 1806, 1807, in repeated excursions from Damascus, he explored the Haouran, and the countries east of the Jordan, and once passed to Jerusalem by rounding the southern extremity of the Dead Sea from the east. These were new tracts unexplored by European feet since, at least, the times of the Crusaders, though now already well worn by English travellers, following the example which Seetzen gave. It is to be regretted that we have no connected account of his researches. All the information which the public has received concerning them is contained in his letters to Baron Zach, which were published in the different volumes of the 'Monatliche Correspondent.' His journals, arranged by himself, up to April, 1809, and therefore containing all his researches except those connected with Arabia, are still in existence, and it may be hoped they may yet see the light.<sup>c</sup> His letters contain a large number of excellent observations on the physical characteristics and natural (particularly mineral and vegetable) products of those parts of Palestine which he visited; and it is to be regretted that the only portions of his observations which have yet been offered to the English public are those contained in a thin pamphlet published, in 1810, by the Palestine Association, under the title 'Some Account of the Countries adjoining the Lake of Tiberias.'

The portion which relates to the Holy Land of the work of the Dutch travellers Van Egmont and Heyman,<sup>d</sup> though of small extent, contains a larger number of good and sensible observations on the physical characteristics and products of the country than accounts of much greater pretension have usually afforded.

In our own language, the well-known and excellent work of Dr. Shaw<sup>e</sup> (1722) contains numerous elucidations of Scripture from the customs and natural history of the East; but those parts which refer to the actual physical history of Palestine are brief, though very valuable.

Pococke<sup>f</sup> (1738) is a traveller whose learning and antiquarian zeal are well understood.

<sup>a</sup> 'Reise nach dem Gelobten Lande.' Halae Magd., 1751.

<sup>b</sup> 'Reisen durch Europa, Asia, und Afrika.' Halae Magd., 1771.

<sup>c</sup> See the American 'Biblical Repository.' Dr. Robinson, the editor, says that the journals of Seetzen had been, and probably still were, in the hands of Professor Kruse, of Dorpat. That gentleman had made some preparations to publish them, but was prevented by his inability to make out the Arabic words and names, and his unwillingness to employ another person to do this for him. But Dr. Robinson was told by Genesius, who had examined the manuscripts, that they contain few important general facts beyond those which had been given to the public by Seetzen himself in his letters.

<sup>d</sup> 'Travels through part of Europe, Asia Minor, the Islands of the Archipelago, Syria, and Egypt, translated from the Low Dutch.' Lond., 1759.

<sup>e</sup> 'Travels, or Observations relating to several Parts of Barbary and the Levant,' 3rd edit. Edin., 1808.

<sup>f</sup> 'Description of the East.' Lond., 1745.

By these qualities he is chiefly distinguished: yet he has some observations on the natural features and products of the country which are entitled to respect; particularly as, to these, he has added a list of the plants which he found growing in Palestine.

Clarke<sup>a</sup> (1801) spent but eighteen days in Palestine, and his account of it is unequal to his high reputation, and to some other portions of his extensive work. It is still, however, much above the common level, and furnishes many interesting notices of plants observed by the traveller on his way. Burckhardt<sup>b</sup> (1810—1812), though no naturalist, allowed nothing to escape his notice in the districts through which he passed; and hence he offers some very important contributions to the natural history of northern Palestine, and the countries beyond Jordan, and to the east and south of the Dead Sea, which were formerly occupied by the tribes of Reuben and Gad, and the half-tribe of Manasseh, and the nations of Moab, Ammon, and Edom. Indeed, Burckhardt, with Seetzen<sup>c</sup> (1805-7), Irby and Mangles<sup>d</sup> (1818), and Buckingham<sup>e</sup> (1816), are entitled to the praise of having made known to our own age the Trans-Jordanic country, with which so many Scriptural and historical associations are connected, but which no former travellers ventured to visit, or undertook to describe. Among the travellers we have just named, it may be very safely said that Irby and Mangles furnish a larger number of new facts towards the physical history of the Holy Land than are to be found in any of the works, old or recent, which have passed under our notice, or in many of them put together; and it is much to be regretted that theirs, which is in many respects the most informing book on the general subject, has never been properly offered to the public, and is difficult to procure, having only been printed for private distribution.

Mr. Buckingham's descriptions of the physical characteristics of the districts over which he travelled afford a more considerable number of useful facts, of the required class, than we expected to find. These are the most abundant and instructive in the work, which describes the countries east of the Jordan, which is, in other respects also, a more valuable performance than the same author's previous work on Palestine.<sup>f</sup>

We are happy that a few scattered notices of the natural characteristics of particular spots enable us to allow a place in our list to Dr. Richardson<sup>g</sup> (1818), the Maundrell of the 19th century, and, unquestionably, the very best topographer which has yet appeared of Jerusalem and of those parts of Palestine which he visited.

Madox<sup>h</sup> (1824) has but very few observations available for the purpose we have in view; but these few, which are chiefly mineralogical notices and allusions to the state of the weather, are good and useful. Mr. Madden<sup>i</sup> (1827) has much to say on various points of natural history *before* he reaches Palestine; but after he enters that country, the information we obtain from him is very small indeed. The Rev. Vere Monro<sup>k</sup> (1833) has some knowledge of botany, which induces him to take notice of plants, and to specify them with unusual clearness. The portion of his work which Dr. Hogg<sup>l</sup> (1833) allows to Palestine is but small; but that small portion is valuable, from its unusually numerous and distinct indications of the products, appearance, and physical character of the ground he passed over.

From Mr. Robinson's<sup>m</sup> (1830) two volumes some small pieces of useful information may be gleaned; but he makes so uncommonly free with the writings of his English predecessors, that it is difficult to distinguish the new information, if there be any, or to estimate the degree of honour to which he is himself entitled.

Major Skinner<sup>n</sup> (1833), Mr. Stephens<sup>o</sup> (1836), and Lord Lyndsay<sup>p</sup> (1836), may be classed together as belonging to the personal-adventure class of travellers. They offer us agreeable books, readable, and instructive to the class of general readers for whose use they are intended.

<sup>a</sup> 'Travels in various Countries of Europe, Asia, and Africa. Part II. Greece, Egypt, and the Holy Land.'

<sup>b</sup> 'Travels in Syria and the Holy Land.' Lond., 1822.

<sup>c</sup> 'Account of the Countries adjoining the Lake of Tiberias, the Jordan, and the Dead Sea.' Bath, 1810.

<sup>d</sup> 'Travels in Egypt, Nubia, Syria, and Asia Minor, during the years 1817 and 1818.' Lond., 1823.

<sup>e</sup> 'Travels among the Arab Tribes.' 1825.

<sup>f</sup> 'Travels in Palestine,' 1821.

<sup>g</sup> 'Travels along the Mediterranean.' Lond., 1829.

<sup>h</sup> 'Excursions in the Holy Land, Syria, Egypt, &c.' Lond., 1834.

<sup>i</sup> 'Travels in Turkey, Egypt, Nubia, and Palestine, in 1824, 25, 26, 27, and 29.'

<sup>k</sup> 'Summer's Ramble in Syria.' Lond., 1836.

<sup>l</sup> 'Visit to Alexandria, Jerusalem, and Damascus.' Lond., 1835.

<sup>m</sup> 'Travels in Palestine and Syria.' Lond., 1836.

<sup>n</sup> 'Adventures in an Overland Journey to India, 1836.'

<sup>o</sup> 'Incidents of Travel in Egypt, Arabia Petraea, and the Holy Land.' Lond., 1838.

<sup>p</sup> 'Letters ou Egypt, Edom, and the Holy Land.' 1838.

But to one by whom books on Palestine have been *studied*, these works do not, in Palestine, offer anything new beyond the character, adventures, and, perhaps, the impressions of the authors,—save when they state any changes which may have occurred since the visit of the last preceding traveller, or illustrate by new facts the character and condition of the people. For the object we have now in view, these three works offer few materials; but these few are worth collecting. Mr. Stephens and Lord Lyndsay did not turn to much account their peculiar advantage of entering the Holy Land by a route (from the south-east) previously untrodden. Major Skinner makes better use of *his* advantage in crossing the eastern desert to the Euphrates. One refreshing characteristic is common to the soldier, the merchant, and the nobleman,—an unaffected respect for the Holy Scriptures, rising, in the case of Lord Lyndsay, to a degree of enlightened piety which, in our day, procures him honour, but which in a day not long past might have exposed him to much derision, and to many a taunt hard to bear. That there are such travellers in our day, and that they are received with attention and respect, is a sign of the times, full of promise.

The latest of our travellers in Palestine is in many respects the most informing of any who has appeared before the public for many years. This is the Rev. C. B. Elliot,\* whose travels in the country were more than usually extensive, and whose observations in its physical geography and every branch of its natural history, are much more than usually numerous, and, as far as they go, truly valuable. He seems to have turned to the best account the advantage which he enjoyed of travelling with the Rev. G. Nicolayson, the well-informed missionary to the Jews, who has long resided in Syria, and of late years at Jerusalem. This advantage, concurring with the author's own turn for useful observation, results in the production of a more original and instructive account of a journey in the Holy Land than the preceding fifteen or twenty years had afforded.

Of the travellers lately noticed, those who have explored the country east of the Jordan are Madox, Robinson, Stephens, Lord Lyndsay and Elliot: but it is not easy to see that any of them, excepting the last, makes any addition of consequence to the information which Seetzen, Burckhardt, Buckingham, and Irby and Mangles had long before supplied.

In concluding this survey, we are quite aware that the estimate which we have formed will, in many instances, be found to differ from those usually entertained. Let it, therefore, be recollected that many of the names we have given are those of travellers who visited other countries besides Palestine, and the prevailing estimate of whose character has been formed with a view to the aggregate result of *all* their labours; whereas, we have confined our attention to those parts of their works which treat of the Promised Land, and which may be worse or better than the other parts. Then, again, it is to be understood that we have examined these works for contributions to a physical history of Palestine, and for no other purpose; and that our notices have necessarily been guided by that limiting consideration. And if any one should think that we have manifested an inclination to estimate the travellers prior to the 18th century more indulgently than those since, it will be remembered that the former were selected from a great number, and were necessarily estimated with some comparing reference to the utter dearth of useful facts among their contemporary pilgrims; whereas, the travellers of later date could not possibly be estimated without some view towards the higher requirements of a more improved age.

It will be recollected that the above enumeration is confined to such authorities as seem to furnish some materials towards the natural history and physical description of Palestine. Hence we have necessarily omitted to notice a multitude of works which, of whatever value in other respects, afford little if any information on this class of subjects. Some of the names we have mentioned must be familiar to our readers, many of whom will feel surprise to be told, that information has been as little sought for, by writers on the physical history of the Bible, in the more recent and better known works now mentioned, as in those older and less known which were before enumerated. Shaw is the only one of these whose work appears to have been consulted. This is a circumstance which makes one inclined to suspect that the unsatis-

\* 'Travels in the Three Great Empires.' 1839.

factory character of the current books on the subject proceeds less from the unacquaintance of their authors with proper sources of information, than from indisposition to undertake the certainly serious labour of collecting and digesting the numerous small facts dispersed over so large a surface.

It may be asked, then, how have such accounts been prepared, since the proper authorities have not been consulted. The answer has been given by anticipation,—that really no attempt has been made to furnish the physical history of *Palestine*; and that while much has been done to explain and illustrate the allusions to natural products and physical circumstances which *the Scriptures* contain, it has been done on a loose principle, which was very far from requiring that the illustration should be sought in, or even near, the country which supplied the original subject. The few who saw the superior value, in such subjects, of facts derived immediately from the parent country, overlooked the sources we have indicated, and turned only to those few persons who had visited Palestine as professed naturalists. These form a class by themselves, and we have, therefore, reserved them for that separate notice to which we now proceed.

The first of these is Peter Belon,<sup>a</sup> who spent three years (1546—49) in exploring the Levant, at the expense of Cardinal de Tournon. He travelled in Greece, Asia Minor, Egypt, Palestine and Syria. He gave his principal attention to the various animal and vegetable products which occurred to his notice, without entirely overlooking topographical matters and the manners of the people. His account of Palestine is short, but exceedingly valuable, from the number of its products which he enumerates. The name of Belon is well known to general naturalists; but the results of his researches have rarely been referred to by writers on the natural history of the Bible. His name is not, for instance, given by Dr. Harris in his list of authorities.

Later in the same century, nearly three years (1576—79) were also spent by Rauwolff<sup>b</sup> in Palestine, Syria, and Mesopotamia, for the express purpose of acquainting himself with the botany of those countries. The information which he gives on the plants of the Holy Land is extensive and very valuable; and the little account to which it has been hitherto turned is the more strange, as the work exists in the English language, having been translated under the auspices of Ray, who added useful catalogues of Levantine plants, collected from Rauwolff, Belon, and others.

But by far the most important contribution to the natural history of Palestine made by any single traveller was furnished by Hasselquist, a pupil of Linnæus. He died on his expedition, in 1752, at Smyrna; and his papers having been procured from thence, were published by Linnæus himself,<sup>c</sup> who prefixed an introductory account of Hasselquist, in the course of which he thus states the origin of that impulse which led his lamented pupil to the Holy Land:—“In one of my botanical lectures in the year 1747, I enumerated the countries of which we knew the natural history, and those of which we were ignorant. Among the latter was Palestine. With this we were less acquainted than with the remotest parts of India; although the natural history of this remarkable country was the most necessary for divines and writers on the Scriptures, who have, indeed, used their utmost endeavours to know the animals therein mentioned, yet could not, with any degree of *certainty, determine what they were, until some one should visit Palestine and acquaint himself with its natural history.* This is the more surprising, as botany is much indebted to several industrious divines, who had strictly examined the plants of other countries; but though many of the Romish clergy travel to Palestine every year, not one had ever troubled himself on this subject. Hasselquist was very desirous of being the first who should inform the public of the natural history of Palestine, and was determined to accomplish it. He imparted his design to me soon after: but, surprised at his

<sup>a</sup> ‘Observations de Plusieurs Singularités et Choses Memorables trouvées en Grèce, Asie, Judée, Egypte, Arabie, et autres Pays estranges.’ Paris, 1589.

<sup>b</sup> ‘A Collection of Curious Voyages and Travels. In two tomes, the first containing Dr. Leonhart Rauwolff’s Itinerary into the Eastern Countries. Translated from the High Dutch, by Nicholas Staphorst.’ Lond., 1693.

<sup>c</sup> The original is in Swedish. An English translation appeared under the title of ‘Voyages and Travels in the Levant, in the Years 1749, 50, 51, 52; containing Observations in Natural History, Physick, Agriculture, and Commerce, particularly on the Holy Land, and the Natural History of the Scriptures. By the late Fred. Hasselquist, M.D. Published by Charles Linnæus.’ Lond., 1766.

enterprising spirit, I represented to him the length of the way, the great difficulties, the many dangers, and the very considerable expenses which would attend such an undertaking, and, lastly, the indifferent state of his own health, particularly the weakness of his lungs: but from this he urged his object the more, alleging that weak lungs could only be cured by travel and change of climate; and so determined was he in his resolution, that he declared he would rather walk all the way than have his purposes crossed. His mind was fixed on the voyage." Though very inadequately supplied with the requisite funds, he was enabled to accomplish all the objects which he had proposed to himself; and it was while waiting at Smyrna for a passage home with his collections, that he was attacked by the illness of which he died. The collection of his papers, published by Linnæus, is not extensive, and a considerable portion is occupied with matter pertaining to Egypt, Natolia, and Cyprus: but his accounts and lists of animals, insects, and plants of Palestine are invaluable as far as they go, and, in the present state of our knowledge, must form the basis of all that can be offered on the subject. Had Hasselquist lived to digest his own materials, he might have given the world something like a complete natural history of the Holy Land; but, as it is, he can only be regarded as one of many contributors to such a history, though by far the chief among them all. The specimens of plants collected by him furnished Strand, one of the disciples of Linnæus, with the principal materials for the 'Flora Palæstina,' inserted in the 38th volume of the Linnæan 'Opuscula.'

The famous Danish expedition, projected by Michaelis and supported by the King of Denmark, was, in its original design, intended chiefly to procure illustrations of the sacred records, and particularly of the natural history of the Scriptures. The naturalist of the expedition, however, died in Arabia; and although the survivor, Niebuhr, published a catalogue of subjects of natural history<sup>a</sup> from his papers, it relates entirely to Egypt and Arabia, and offers no direct contributions to the natural history of Palestine. As, however, the Bible notices the products of Arabia and Egypt as well as of Palestine, the work has been much used by later writers on the natural history of the Bible, particularly as it gives the native names of the various products enumerated, and thus opens an extensive mine which might be explored for those etymological analogies for which such writers very anxiously seek.

As the materials which the great French work on Egypt offers have been entirely overlooked by all writers on the physical and natural history of Palestine, the plan of this chapter requires us to indicate their value.

M. Delisle, in his descriptions of Egyptian plants,<sup>b</sup> necessarily includes many which are common to Egypt and Palestine. In his memoir on the plants which grow spontaneously in Egypt, he makes some useful observations in comparative botany, including Syria in his consideration; and the succeeding memoir on the plants cultivated in Egypt offers some valuable allusions to the ancient and modern state of cultivation in Palestine.<sup>c</sup> The 'Floræ Ægyptiacæ Illustratio' of the same writer is very valuable, as it combines the results of all previous inquiry, and clearly indicates the species common to Egypt and Palestine, as well as those found on the common border of both countries.

The twentieth volume treats on the physical geography of Egypt, by M. Girard, and from it some pieces of useful information may be gleaned by the writer on the physical history of Palestine who wishes to take a large view of his subject—which view, to be of *historical* value, must, while it includes Lebanon on the north, include also on the south the desert regions which border equally on Palestine and Egypt, as well as the mountains and deserts of the Sinai peninsula.

In the twenty-first volume M. de Rosière supplies much valuable information concerning the mineralogical construction of districts which are historically and physically connected with Palestine, and which must be comprehended in such a large view as that to which we have adverted.

The account which MM. Savigny and Audouin give, in part of vol. xxi., the whole of vol. xxii.,

<sup>a</sup> 'Descriptiones Animalium, Avium, Amphibiorum, Piscium, Insectorum, Vermium; quæ in Itinera Orientali observavit Petrus Forskål.' Haaniæ, 1775. 4to.

<sup>b</sup> 'Description de l'Égypte,' tome xix., 8vo edit..

<sup>c</sup> We may here mention that the subject of the agriculture of the Hebrews has been ably treated by Reyner in his work, 'De l'Économie Publique et Rural des Arabes et des Juifs.' Geneva, 1820; and also by the Rev. T. Plumtree, in the 'Investigator.'



and part of vol. xxiii., of the invertebrate animals "of *Egypt and Syria*," will, as this inclusion of such Syrian species as were known to the Commission intimates, supply much important information concerning this great division of animals which may elsewhere be sought in vain.

Part of the twenty-third volume is occupied by M. Geoffroy St. Hilaire's description of the mammalia found in Egypt. This does not profess to include Syrian species; but, as it is well known that a large proportion of the animals specified are common to Egypt and Palestine, much of this account is applicable to the mammalia of the latter country.

The next article in the same volume gives the ornithology, by M. Savigny, under the title of '*Système des Oiseaux de l'Égypte et de la Syrie.*' This is rather a meagre list, and professes to form but part of a more extensive work. It, however, notices the principal birds known to exist, not only in Egypt, but in Palestine, which latter small country is of course not expected to offer any birds peculiar to itself.

In the twenty-fourth volume M. Geoffroy St. Hilaire describes the reptiles found in Egypt; and although we know that Palestine is less prolific of such creatures than Egypt, it is not known that the Holy Land contains any species which this account does not include. The memoirs on the fishes of the Nile, the Red Sea, and the Mediterranean coast, is of peculiar value in a branch of our inquiry concerning which little information is elsewhere to be found. We may thus know what fish the Hebrews were likely to obtain from the Mediterranean; and even an account of the fish of the Nile cannot fail, with due care, to be profitable, when we recollect the ancient report, preserved by Josephus, and corroborated by modern travellers, that the species of fish in the Sea of Galilee also exist in the Nile, whence it was anciently imagined that there was some subterraneous communication between the river and the lake.

It will be seen from this statement that the '*Déscription de l'Égypte*' furnishes much information of the sort we are seeking, supplied by some of the first men of our age. Considerable information, suited to the illustration of the antiquities, arts, and customs of the Hebrews, might also be drawn from other parts of this great work, which has singularly been overlooked by writers on Palestine and the Jews.

In an enumeration of this kind, it would be unpardonable to overlook Dr. Russel's '*Natural History of Aleppo.*' It gives a far better account of the whole natural history, in every department, about Aleppo, than Haasselquist and all other authorities put together afford concerning Palestine; and if any one had supplied a similar work concerning that country, little would have been left to desire. The district of Aleppo is, like Palestine, in Syria; but that city being three degrees of latitude to the north of the Holy Land, and about one degree of longitude to the east of the parallel of the Jordan, some difference in its seasons and products, particularly its vegetable products, may be expected. And this expectation of difference will be increased when we consider that the district of Aleppo is much more elevated above the sea than any part of Palestine; that although some parts of Palestine are equally distant from the Mediterranean, they are not like the Aleppo district, separated from that sea by ranges of high mountains. But the difference thus arising may be in some degree counterbalanced by the equalizing effect—upon all those parts of Syria not involved in the higher mountains, or situated close upon the coast—of the deserts of the east and south, which modify, to an extent not easily calculated, the effects which might be expected to result from difference of latitude and physical elevation. And looking to mere situation, without reference to the difference of latitude, the northern part of Palestine, towards Lebanon, and the high plains east of the Jordan, might seem to be not very differently situated than the Aleppo district. Upon the whole, however, the temperature of Palestine must be some degrees higher than that of Aleppo—or intermediate between that of Aleppo and Egypt, or of Aleppo and Arabia; and it is of importance to find some general principles which may ascertain how much of Dr. Russel's account of the natural history of one part of Syria may be applicable to another. In the first place it is evident that, if we find in Palestine such products, animal or vegetable, as the Aleppo district affords, the account which Dr. Russel gives of them may, without hesitation, be adopted with respect to the zoological subjects, and also with respect to the botanical, but with more attention in this class to possibly modifying circumstances. The enumeration of species may also assist us to discover some of those found in Palestine which travellers have failed to

mention. For instance, we have lists for Aleppo, Egypt, and Arabia, that is, for countries between which Palestine is interposed. If we find a product in Egypt or in Arabia, we have no right to conclude that it is also in Palestine—their temperature being higher than that of the Holy Land: so in like manner, that a product is found in the Aleppo district offers us no reason to conclude that it is in Palestine, the Aleppo temperature being considerably lower; but if we find this product *both* in the higher and lower temperature,—if we find it not only in Egypt or Arabia, but *also* in Aleppo, we shall have some right to conclude that it is also afforded by Palestine, it being scarcely credible that so small a country should be surrounded on all sides by a product which it does not contain. And this conclusion will be strengthened if we find this same product not only in Aleppo, and in Egypt or Arabia, the higher and lower temperatures, but *also* in Cyprus, the temperature of which is intermediate, and very similar to that of Palestine. This is the only assumption under which we can use the valuable materials of Russel's 'Natural History of Aleppo' as collated with those which the 'Description de l'Egypte,' Forskal, Mariti, and others, offer concerning the products of Egypt, Arabia, and Cyprus. The assumption, thus guarded, is far more modest than any which former writers, on the subjects before us, have taken; and, moderate as it is, we shall be most reluctant to resort to it, and trust that the success which has rewarded our perseverance in rooting up information concerning the actual products of Palestine will leave us but small occasion to resort even to the assumption which we have thus carefully guarded.

It was necessary to be particular in this explanation, that the very restricted use to which we propose to apply such materials as have been almost the exclusive reliance of previous writers, and which they have employed with little discrimination, may be clearly understood.

In the preceding pages we have indicated a want, and pointed out the sources from which it might be, at least, partially supplied. This must not, however, lead to the expectation that the ensuing pages offer any pretensions adequately to supply the want we have indicated, though we are willing that it should be understood to point out what we conceive to be a better course of proceeding than any which we know to have been hitherto taken. It professes to be nothing more than a sketch, in which, after having traced the physical geography of the country, we shall proceed to enumerate its products in the several departments of nature. In this part we shall set down no article which has not been *ascertained* to exist in Palestine; although, of course, such facts as it may be desirable to introduce, illustrative of the natural history and character of the same product, may, when necessary, be drawn from other countries. As there appears no adequate reason for connecting with the history of Palestine particular accounts of products which, although they exist there, are also widely diffused in other countries, such will very often be barely specified, while more particular attention may be given to those articles which are almost peculiar to Palestine or Syria, which there exhibit peculiar characteristics, or which, for any reason, were of peculiar interest or importance to the Jewish people.

#### SUPPLEMENTARY NOTES.

(1) "BOCHART," p. iv.—We feel that we shall be in great danger of seeming to do injustice to some most deservedly eminent names, unless we again and again remind the reader that our inquiry is confined to a single object, in pursuit of which we cannot properly turn aside to admire any excellence but that for which we seek. We want distinct and positive facts for the natural history of Palestine; and if we do not find these in the quarters most likely to supply them, or in the extent which might be expected, it would be quite beside the purpose for us to occupy our space in explaining what other things, as good, perhaps,

or better, but not suited to the required use, may in those quarters be found.

These observations we may, with much propriety, connect with the name of Bochart, although there cannot be any persons who hold that name in higher honour than we do; and we cannot let it pass without the addition of a few more remarks, which may further explain the view we take of such works, and exonerate us from any imputation of not rendering to a distinguished man the honour of which he is worthy.

Bochart's 'Hierozoicon' was a production of those days in which the entire labour of a

diligent life was often embodied in a single work. This was not exactly Bochart's case, since he found leisure to produce other works; but the 'Hierozoicon' is still the labour of thirty years; and the thirty years' labour of such a man as Bochart could not fail to produce results worthy of all admiration and respect. With such sentiments the 'Hierozoicon' was regarded by Cuvier, who signalises it as the most perfect account which we possess of the knowledge of nature which existed among ancient nations. It is, in fact, a cyclopædia of ancient natural history; and as such it is indispensable to the natural historian, and possesses a character and value of its own, which no other work can supersede, and with which no other can interfere. The facts preserved in this work are often erroneous and doubtful: but it is a fact of the highest importance to know what the ancients or the orientals have stated on subjects of natural history; and it is the circumstance that the work of Bochart has supplied, to the more practical natural historians of later days, all the information of this sort which they could want, which has maintained its use and authority unimpaired. This, its permanent character, does not, as some mistakenly imagine, prove its value as a book of natural history, or show how much its author was, in the knowledge of nature, in advance of his age. On the contrary, the work is not the production of a natural historian, but is a work of learned research—a collection of old knowledge in natural things, the use and character of which remains unaffected by any advances which may have been made in the science of Nature.

We have been anxious, this once, to show that we are not insensible to the general merits of writers, whose labours prove to be of less value *for our limited purpose*, than their professed object might lead one to expect. We think, indeed, that their mode of investigating natural history was partly a matter of necessity, arising from the scarcity of positive facts, and arose partly from the want of a proper appreciation of the value of such of these facts as did exist and might have been collected. Hence all work in natural history was considered to be accomplished, when all which the ancients had said was brought together; and while the general result of this was curious, and, in many ways, useful, much harm was done,—at least, as it regards Palestine,—by the establishment of a precedent, with a special application to that country, which has been indiscriminately followed by later writers, notwithstanding the large number of positive and tangible facts which has gradually accumulated, and the greatly improved forms which all physical in-

quiry has taken. Indeed, if the reader should take the trouble to examine these works, with this specific object in view, and notes how few of the adduced facts are derived directly from Palestine, and how little of the abundant information is more than hypothetically applicable to that country, we suspect he may be led to doubt whether they have not done more harm than good for the natural history of Palestine, however highly he may be disposed to estimate their value in other respects.

(\*) "SCHEUCHZER," p. vi.—The few persons whom we have known to possess copies of this superb work have seemed so very proud of it, and to entertain such exaggerated notions of its authority and value, that a few further remarks upon it may not be inexpedient.

The plates, which are best in the Latin copies and worst in the French, form such a series of illustrations as very few other works possess, and are apt to dispose the spectator to annex an idea of value and importance to the text which they illustrate. But a cursory examination, even of the plates, is quite enough to indicate that Scheuchzer's mind laboured under a considerable want of sound judgment and discretion. There is not a passage of Scripture, having the least reference to any production of nature, any physical phenomenon or incident, or any operation in manufacture or art, which Scheuchzer does not undertake to illustrate by an engraving. The engravings thus brought together, form, what one of the biographers\* of the author justly denominates *un bizarre recueil*. The same writer does not indicate the *literary* inadequacy of Scheuchzer's work with sufficient clearness, but remarks strongly on the plates. If the Bible, as he instances, mentions, in any passage, a quadruped or bird, the animal is designed in all sorts of positions and in very elaborate landscapes: if the eye or the ear is mentioned, the plates hasten to show all the anatomical details of those organs. The engravings become, if possible, more useless still, considering the professed object for which they are introduced, and of the work to which they belong, when they not only represent ordinary circumstances, such as a combat, a sacrifice, or the anointing of a king, but even miraculous events, such as the descent of fire from heaven upon Sodom and Gomorrah, or the earth swallowing up Dathan and Abiram, or, finally, simple allegories or mere allusions, all of which are made the subjects of expensive and elaborate plates, under the sole pretext that they relate to natural objects.

\* In the 'Biographie Universelle.'

(<sup>3</sup>) "CALMET," p. vi.—The singular work of Mr. Charles Taylor, to which the text refers, has connected so much confusion with all reference to Calmet's authority, that, in justice to ourselves and others, who have sometimes had occasion to annex to our statements the sanction of his eminent name, the following explanation may be given.

The three great works which chiefly distinguished the useful life of this learned and ingenious Benedictine were his Commentary, his Dictionary of the Bible, and his History of the Bible. The first of these bears the title of 'Commentaire Littéral sur tous les Livres de l'Ancien et Nouveau Testament,' Paris, 1719—1726, in nine vols. folio. This immense work, which is but little known in England, was pronounced by Dr. Adam Clarke to be "without exception the best comment on the sacred writings ever published;" and this high measure of praise, understood as it was given, will scarcely seem exaggerated to those who have any actual knowledge of the work to which it is applied. This stupendous production comprehends a large number of Dissertations on a great variety of subjects belonging to sacred antiquities and criticism; which were also published separately in three 4to. volumes. Soon after the appearance of these Dissertations, a very laudable attempt was made to extend the benefit of their multitudinous information and extensive research to the English reader, by the publication of a portion, under the title of 'Antiquities, Sacred and Profane;' but the work was never completed, and the volume then issued is now very difficult to obtain.

Calmet's next great work, and that by which his name is alone popularly known in this country, was the 'Dictionnaire Historique, Chronologique, Géographique, et Littéral de la Bible,' Paris, 1730, 4 tomes, folio. This, which has formed the basis of all modern dictionaries of the Bible, was speedily presented to the English public by the Rev. S. D'Oyly, and the Rev. J. Colson, in three large folio volumes, illustrated by 160 capital engravings. This dictionary, although the most useful and popular of Calmet's works, and novel in its plan, is little other than an alphabetical digest of the information which had already been given in the Commentary and Dissertations, omitting much valuable matter which those works contain, and adding something from the surplus materials which had been collected for them. This does not by any means detract from the value of the work, but explains the mode of its construction. Towards the end of the last century, D'Oyly and Colson's edition of Calmet had become scarce and costly, which sug-

gested to Mr. Charles Taylor the advantage of putting forth a new edition; and his method of performing this task was singular in the extreme. He first reduced the Dictionary by abridgment to about one-third of its original extent, so that it might be comprehended in two rather loosely-printed quarto volumes, and to these he added two other volumes, containing much more matter than the abridged Dictionary, consisting of articles of various length, which he called 'Fragments,' on the antiquities, geography, natural history, and mythology of the Bible; and the work was completed by a fifth volume, consisting of engravings, designed chiefly to illustrate the 'Fragments,' and containing few of those in Calmet's original work. This publication has acquired extensive and deserved popularity under the general name of 'Calmet's Dictionary of the Bible,' and by that title the writers who really cite Taylor's 'Fragments' usually refer to the authority they have employed. The Dictionary portion of this edition is, indeed, seldom quoted, and is of small value compared with the original English edition of D'Oyly and Colson. Hence it curiously enough happens that the name of Calmet is in this country associated with writings not his own, and which he could not have written; while the English public is comparatively ignorant of the real productions of this eminent man. Hence also a writer who now uses the name of Calmet, without careful discrimination, is at once supposed to be availing himself of Taylor's ingenious speculations. This mistaken notion has, we believe, been connected with the frequent references to 'Calmet' in the 'Pictorial Bible' by the author of the present work; and to preclude its recurrence, it may be proper to explain that wherever the 'Fragments' are cited by him, they are ascribed to their proper author, "Taylor," not "Calmet;" and that such references rarely occur is because the 'Fragments' were almost never consulted in the progress of that undertaking. This was not from any disposition to undervalue those ingenious and often instructive papers, but from the feeling that the facts which they contain have so often and in such various forms been presented to the English reader, that they had become familiarly known, and needed not to be repeated. The greater portion of the facts and opinions quoted by us under the name of Calmet have been derived from the 'Dissertations,' as they appear, in an improved and corrected form, in the fourth edition of the 'Bible de Venise.' The notes in the folio 'Commentaire' also supplied some valuable facts, and the Dic-

\* Twenty-five tomes, 8vo. Paris, 1820—1824.

tionary was occasionally consulted in the complete edition of D'Oyly and Colson. While this explanation has a primary reference to the 'Pictorial Bible,' it is not unsuitably here introduced, as it will serve to distinguish the references to Calmet and Taylor, respectively, which the present work may contain.

The same writer's 'History of the Bible' is a plain and useful performance, perfectly trust-worthy, but no wise remarkable, unless for the very absence of that learned and curious research which distinguishes all Calmet's other works. The preface declares that this character was purposely given to a production intended for the instruction of plain readers, and in which it was judged desirable to imitate the brevity and precision of Abbé

\* 'Histoire de l'Ancien et Nouveau Testament, et des Juifs, pour servir d'Introduction à l'Histoire Ecclésiastique de M. l'Abbé Fleury, 4 tomes, 4to., Paris, 1735.' So our copy is dated, but there were prior editions.

Fleury, to whose 'Ecclesiastical History' it was designed to form an introduction.

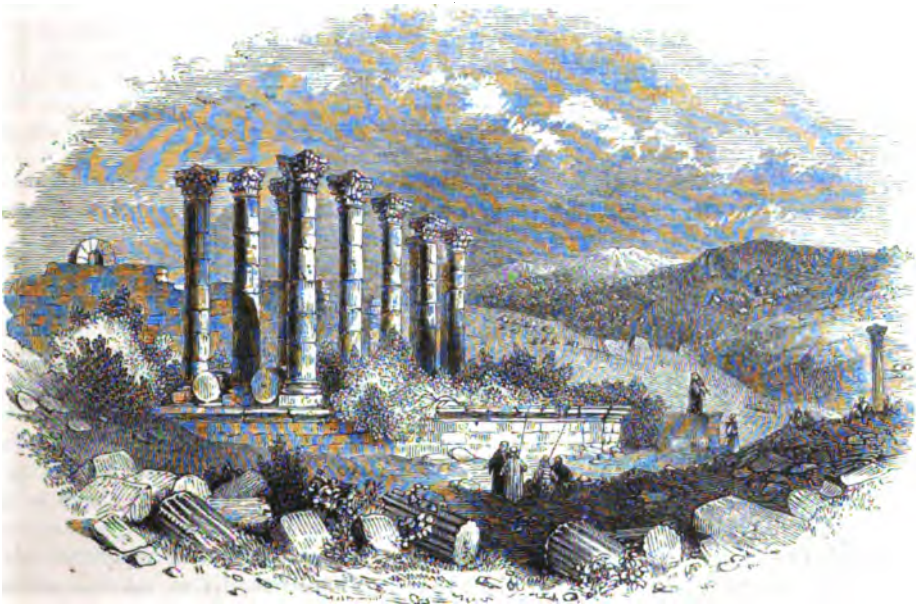
(\*) "BOUCHER," p. ix.—For the benefit of the curious in title-pages, we preserve that which Boucher has prefixed to his curious performance:—"Le Bouquet Sacré, ou le Voyage de la Terre Sainte, composé des roses du Calvaire, des lis de Bethléem, des hyacinthes du Mont Rivet, et de plusieurs autres pensées de la Terre-Sainte, par le P. Boucher, frère-mineur-observantin. Rouen, 1698." Of a piece with this is the equally irreverent and absurd dedication of the work—"Au Roi des Rois Jésus éternel," etc.—"Et à très-sainte et très-puissante princesse Marie, épouse du Père éternel, mère du Fils tout puissant, sacré temple du Saint-Esprit, Impératrice des anges, Avocate des pécheurs et brise-tête du serpent infernal."



[Crusaders approaching Jerusalem.]

## CHAPTER II.

### MOUNTAINS.



[Scene in Mountains of Gilead—Ruins of Jerash.]

PALESTINE, the country in which were transacted the important events which it is the object of the ensuing history to record, is a small territory on the western borders of Asia, fronting the Mediterranean, being the south-eastern portion of Syria. On the north this territory is bounded by the Lebanon mountains; but its southern border is lost in the open desert which separates Palestine from Egypt, and which formed a kind of neutral ground between them. As, however, it is necessary to take some line of boundary here, in order that the length of the country from north to south may be stated, it cannot be far wrong to draw it from the stream of El Arish (supposed to be the scriptural "River of Egypt"), eastward to a point about 25 geographical miles south of the Dead Sea, on the borders of that valley which extends between that Sea and the Gulf of Akaba. Assuming this southern boundary, and fixing the northern one at the parallel of the stream which flows from Lebanon into the sea about five miles to the north of Sidon, Palestine will appear to be comprehended between  $30^{\circ} 40'$ , and  $33^{\circ} 36'$  of northern latitude; and the length of a line drawn from the northern line to the southern, through the centre of the country, will not be less than 180 miles.

The eastern border of Palestine is well defined, in nearly a straight line, by the river Jordan and its lakes; but the opposite border, that of the sea-coast, spreads out to the south-south-west, whereby the width of this strip of country gradually increases southward, so that, on arriving near the southern border, the breadth of the land is found to be about thrice as great as in the uttermost north. The line of extreme breadth is embraced between  $33^{\circ} 45'$ ,

and 35° 30' of eastern longitude, being, in that latitude, 92 geographical miles; but the *least* breadth of this territory in the north does not exceed 20 miles, and the average breadth cannot be overstated at about 50 miles.

This is the proper Palestine, the land of Canaan, the Holy Land, the land of Promise. But, for historical purposes, it is quite necessary that the first of these names should be understood to include the domains beyond the Jordan which were as much in the occupation of the Hebrew people, and belong as much to their history, as the territory west of that river. This inclusion will give to Palestine the districts of Argob and of Bashan, of Gilead, and the country south to the river Arnon, which formed the northern frontier of Moab. With this enlargement, the length of the country, regarded as a whole, is not increased; and the line of extreme breadth may still be sought in the south. A view of the map, however, shows that the *average* breadth now bears a much higher proportion than in the separate measurement of the western country. *There* the extreme breadth is little more than an accident of the southern boundary line, and the average breadth bears no proportion to it: but now, in viewing the whole together, giving the country an addition of breadth in its narrowest part, and none in its widest, the previous disproportion between the extreme and the average measurements becomes greatly reduced; and this result is obtained by the increase in the latter, while the former remains the same.

Taking this larger view of the country, the resulting effect will be that its length remains at 180 miles, but its average breadth is increased to about 65 miles. We have also endeavoured to form some estimate of the superficial extent of the whole country, and find room to calculate it at about 11,000 geographical square miles. This does not give a superficial extent equal to one-fourth of England (with Wales), or more than two-fifths of Scotland, Ireland, or Portugal. Bavaria and Sardinia offer an area about twice as large; that of Denmark is about one-third larger: but, according to the estimate we have made, the area of Palestine is nearly double that of Wales, Wirtemberg, or Tuscany. Thus, as to mere extent, the country can only be compared to some of the smaller European states, of which Hanover, Belgium, Switzerland, the Papal States, and the island of Sicily appear to offer the nearest approximation. But the real surface is much greater than this estimate and these comparisons would imply: for Palestine being essentially a hilly country, the sides of the mountains and slopes of the hills enlarge the actual surface to an extent which does not admit of calculation.

But, with all allowances, Palestine remains so small a country, that undue importance might seem to be given to it by the extent to which its history is carried, did we not bear in mind that a country only gives a name to the history of the men by whom it has been occupied—that it is a history of human conduct and passion, of human hearts and minds, the operations of which may be as impressively and importantly developed, and generally are more so, on a small arena as on one that is large. It is this which, in ancient and modern history, has given importance to the histories of spots as small as, or even smaller than, Palestine. It is, perhaps, because the springs of human action in such cases are more clearly displayed, and that all the moving personages of one time are seen in circumstances of real collision or comparison, acting with or acting upon each other—that he takes up history as a part of the study of man, seldom thinks of seeking instruction but where the principles of human action are exhibited with *concentrated* effect, either through the physical necessities of a confined territory, or by the moral action of a representative government. All history, ancient or modern, conveys true instruction or not, or is really interesting or not, in proportion as, from the one or the other of these causes, the spirit and policy of the people of which it treats are *concentratively* displayed. This is not a hypothesis, but a fact, which any one has the power to verify, by observing that the history of no country is deemed of much interest, or is by any means an object of popular study, to which this rule does not apply; and that the real interest we take in the history of a country begins or ceases with the production or discontinuance of this concentrative effect. Without this, history is but a continued tale of wrong and outrage; or but a succession of biographies of "great" men, which offer individual, not national, portraits, and which, although they may be interesting as individual portraiture, do really, by occupying the field of view, exclude from notice those national developments which are the verities of history, and

which give to the history of a nation all those characteristic distinctions by which its real interest is constituted.

Seeing, then, that the importance and interest of a history is not to be estimated by the physical extent of the country, or the numbers of the people to which it refers, it seems to us that nothing can be more unphilosophical than the cavils of those so-called "philosophers" who have been wont to sneer at the importance which has been assigned to so narrow a territory as Palestine, and to so small a people as the Hebrew nation. And equally have those been mistaken, who have sought to meet these objections by magnifying the extent of the Hebrew dominion, and the numbers of the Hebrew people.

These observations concede the supposition that the History of Palestine must be estimated by the same rules as other histories. But this is not the fact. In so far as it includes the history of the Hebrew people, it is the most peculiar of histories;—it is a history of the intercourse between heaven and earth during a long series of ages;—it is the history of that religion which was the destined precursor of the Christian system;—it is the history of one great act through the successive stages of its progress and development,—God himself being the Author of that act, the Jews the agents of its operation, and Palestine the country selected for its exhibition. Besides, this history has what no other history ever could possess,—a visible design and object from beginning to end. One marked portion of this design has been accomplished, and with its accomplishment the House of Israel ceased to be a nation; the other portion is now fulfilling, and the great result, now shadowed forth in dark prophecies, remains a subject for future histories.

Thus, in every way, the history of Palestine, in all that it comprehends, is really the most generally important while it is the most peculiar of histories. And if it had been possible that the circumstances which it embraces should have taken place in some small valley among the mountains, never inhabited by more than a hundred people, the history of that valley and that people would be the most important that was ever written.

Palestine itself necessarily thus becomes of great interest, from its connection with these circumstances, from the associations which result from this connection, and from the various lore which has been brought to bear on all its characteristics. The country which God specially set apart for his great designs, and which, in consequence, contains no spot of ground on which some commissioned angel has not trod, or which does not suggest some incident in the histories of patriarchs, prophets, apostles, priests and kings, whose names supply the familiar links by which our minds measure old times,—excites a peculiar interest in us, scarcely inferior to that with which our own native land is regarded.

But even considered in itself, Palestine is a country, small though it be, well worthy of attention, and in some respects as peculiar as the people whose history is inseparably connected with it. It does not, like most other small countries, constantly remind you that it is physically but part of a larger country, from which it is but conventionally separated; but it is a *complete country*—a compact, distinct, and well-proportioned territory. It offers, as it were, an epitome of all the physical features by which different countries are distinguished, and which very few possess in combination. It has its lofty mountains, its stern rocky wildernesses, and its smiling hills; it has its pleasant valleys, its wide plains, and elevated plateaus; and while on the one hand it presents an extended sea-coast, with its harbours, beaches, cliffs, and promontories, on the other the solitary deserts extend their inhospitable wastes of sand. The principal river of this country, and the smaller streams, the large inland lakes—one of them so remarkable in its characteristics,—the hot springs, and the various volcanic indications, complete the singularly varied natural attributes of this "glory of all lands."

While these remarks apply to our general subject, they may not unsuitably introduce that division of it to which they are prefixed—the Physical History of Palestine.

To form a clear idea of the geographical plan of Palestine we must extend our view considerably beyond and around it. Northward, that view must take in Coele-Syria and the region of Lebanon; eastward, it must embrace the plains and mountains of the Haouran, and the lands of Moab and Ammon; and southward, it must overlook the inheritance of Edom and the



wilderness of Paran, and must penetrate even into the peninsula of Sinai. And this extension of the survey, while it is geographically necessary, is also historically convenient; for the regions thus indicated have not only a kind of secondary importance throughout the history, but were all, for a season, subject to the Hebrew sceptre.

Thus, while there are many questions even in this Physical History which will require us to confine our view to the narrow bounds of Palestine, there are others which will allow us to commence our survey where—

“ Hoar Lebanon, majestic, to the winds,  
Chief of a hundred hills, his summit rears,  
Unshrouded—”

and permit it to include, as we continue our progress,—

“ By Jordan south,  
Whate'er the desert's yellow arms embrace;  
Rich Gilead, Idumea's palmy plain,  
And Judah's olive hills; thence onward those  
Cliff-guarded eyries, desert bound, whose height  
Mock'd the proud eagles of rapacious Rome,  
The fam'd Petrean citadels; till last  
Rise the lone peaks, by Heav'n's own glory crown'd,  
Sinai on Horeb piled.”<sup>a</sup>

Palestine is so involved among the southward continuations of Lebanon as to take the character of a mountainous country, affording, however, some considerable plains, and numerous valleys, the principal of which will hereafter demand our separate attention. This fact brings us at once to the application of the considerations which we have just stated, and compels us to follow the track of survey which has been indicated: for any one who glances at the map will at once see that the mountains of Palestine form but a section of a great system of mountains, which commences on the north long before we reach the Promised Land, and which is prolonged to the south long after we have left it. And if, in scientific strictness, this enlarged view were not necessary in a history of Palestine, yet it is to be remembered that this is not only a history of Palestine, but of the Jews; and the renown of the mountains of Horeb, Seir, and Lebanon, in their history, would still render most desirable their inclusion in this part of our work.

That the mountain framework of Syria is such as to authorise the view we have taken is shown by Volney, in a passage which will very suitably introduce the description we are to furnish:—

“ If we examine a map of Syria, we may observe that this country is in some measure only a chain of mountains, which distribute themselves in various directions from one leading branch; and such in fact is the appearance it presents, whether we approach it from the side of the sea, or by the immense plains of the desert. We first discover, at a great distance, a clouded ridge, which runs north and south as far as the sight extends; and, as we advance, distinguish the summits of mountains, which, sometimes detached and sometimes united in chains, uniformly terminate in one principal line which overtops them all: we may follow this line without interruption from its entry by the north quite into Arabia. It first runs close to the sea, between Alexandretta and the Orontes, and, after opening a passage to that river, continues its course to the southward, quitting for a short distance the shore, and in a chain of continued summits stretches as far as the sources of the Jordan, where it separates into two branches, to enclose, as it were, in a basin this river and its three lakes. In its course it detaches from this line, as from a main trunk, an infinity of ramifications, some of which lose themselves in the desert, where they form various inclosed hollows, such as those of Damascus and Haouran, while others advance towards the sea, where they frequently end in steep declivities, such as Carmel, Nakoura, Cape Blanco, and in almost the whole country between Beirout and Tripoli of Syria; but in general they gently terminate in plains, such as those of Antioch, Tripoli, Tyre, and Acre.”

It appears to us that Volney considers this principal Syrian chain, which he so correctly

<sup>a</sup> ‘ Lebanon.’ A Poem.

describes, as a branch from the great chain of Taurus, which we have ourselves been accustomed to regard as the root of all the mountains which fill the south-west of Asia. Malte Brun, however, is of a different opinion, and as we do not like to disagree with him without absolute necessity, and as, moreover, we are bent on avoiding questions of merely theoretical geography, we shall be content to repeat his statement, only observing that we see no reason why a break, made by even the wide valley of a river, should necessarily be considered to destroy all connection between the opposite mountains. Malte Brun's observation is,—“The mountains are not at all ramifications of Mount Taurus. Mount Rossus, a prolongation of Amanus, terminates at the valley of the Orontes. But the proper Syrian chain begins on the south of Antioch, by the huge peak of Mount Cassius, which shoots up to the heavens its needle-like point, encircled with forests.”

The continuation of these mountains southward gives occasion to remark, as Volney states, that the main chain separates near the sources of the Jordan into two branches, to enclose, as in a basin, that river and its lakes. These two branches, with their numerous ramifications, constitute the mountains of Palestine on both sides of the Jordan. The country to the south of the Dead Sea was too little known in the time of Volney to enable him to trace the continuation and termination of these two ranges beyond the southern extremity of the Dead Sea. His map makes the western range approach nearer to the eastern at this point; and it then continues to proceed in this closer proximity, parallel with it, southward, for about forty miles, when it suddenly strikes westward, joining the eastern range, and shutting up, as in a *cul de sac*, the valley which they had hitherto enclosed between them. But, in reality, the valley remains open, and the two ranges continue to run parallel to each other unto the Gulf of Akaba, where they separate, the one taking the eastern coast of that gulf, and opposing its terminating promontories to the Red Sea at the point where that gulf opens. The other takes the western side of the same gulf, entering the peninsula of Sinai, which divides this gulf from that of Suez. Here it may be considered to terminate, most grandly, near the point of the peninsula, in those renowned mountains at whose foot the shepherd Moses was feeding his flock when the Most High called him to lead forth the Hebrew nation from their bondage in Egypt; and from whose highest top He afterwards made known his law to the same people.

Thus, in an enlarged point of view, the mountains of Anti-Lebanon, dividing in the north of Palestine, send forth two southward branches, which between them enclose not only the basin of the Jordan and Dead Sea, but that of the broad valley which extends from that sea to the Ælanitic Gulf, and of the gulf itself,—the whole extent being not less than 340 geographical miles.

This view, in its natural connections, of the mountain system of Palestine, from its root in Lebanon to its termination at the opening of the Gulf of Akaba, will tend much to simplify our further task by supplying a combination for those conspicuous parts which must now, severally, engage our attention, that we may observe more closely the natural character of those mountains, the forms they bear, and the ornament with which they are invested.

The mountains of Syria, as they vary their levels and situations, are also greatly changed in their form and appearance. In the northern portion, between Scanderoon and the valley of the Orontes, the firs, larches, oaks, box-trees, laurels, yews, and myrtles with which they abound, give them an air of liveliness with which the traveller is delighted. On some declivities he even meets with cottages environed with fig-trees and vineyards, and the sight of these repays the fatigues he has endured on a road which, by rugged paths, leads him from the bottom of valleys to the tops of hills, and from the tops of hills to the bottoms of valleys. The inferior branches, which extend to the northward of Aleppo, on the contrary, present nothing but bare rocks, without earth or verdure.

That part of the range of mountains which extends, through two degrees of latitude, from Mount Cassius southward to Lebanon, offers, on its seaward slopes, a soil and situation suitable for the growth of vines, olives, and tobacco; but on the eastern side—that of the desert—the summits and declivities of this chain present the aspect of almost one continued series of white and barren rocks.

About the parallel of Tripoli (lat. 34° 28' N.) we come to the commencement of two parallel ranges which extend through about one degree of latitude. They form at their termination the natural frontier of Palestine, and enclose between them a fertile valley which has the average breadth of fifteen miles. These are the mountains of Lebanon; and the valley which lies between them is the Hollow Syria (Cœle-Syria) of the ancients; but by the present inhabitants is called, pre-eminently, El Bekka, or the valley. The westernmost of these ranges gradually inclines toward the sea, and terminates at the mouth of the Leontes, near the renowned city of Tyre; while the more inland range is that which, as already described, divides near the sources of the Jordan, to enclose on the west and east the prolonged basin which contains the Jordan and its lakes, and the valley and gulf of Akaba. The denomination of Lebanon is applied in Scripture, and by the ancient Orientals, to both, or indifferently to either, of the parallel ranges which enclose the long valley of Cœle-Syria; but the Syrian Greeks gave the name of Anti-Libanus to the easternmost range, which overlooks the plains of Damascus. This name, although affording a distinction which is useful in precise description, has been so arbitrarily employed by some of the old historians, as to occasion some confusion, the rectification of which has involved much unprofitable discussion, into which we need not enter.

The present natives of the country have found the convenience of distinguishing the two ranges by different names, Anti-Libanus they call the eastern mountain (Jebel Essharki), in opposition to Libanus, which they call the western (Jebel el Gharbi), but to which they also assign the ancient name in the form of Jebel Libnan.<sup>a</sup>

The mountains of Lebanon are by far the highest of the whole range. The highest ridge of the western Lebanon is marked on both sides by a line, drawn at the distance of two hours' journey from the summit, above which all is barren; but the slopes and valleys below this mark afford pasturage, and are capable of cultivation, by virtue of the numerous springs which are met with in all directions. Cultivation is, however, chiefly found on the seaward slopes, where numerous villages flourish, and every inch of ground is turned to account by the industrious natives, who, in the absence of natural levels, build terraces to level the ground, and to prevent the earth from being swept down by the winter rains, and at the same time to retain the water requisite for the irrigation of their crops.<sup>b</sup> Here, amid the crags of the rocks, are also to be seen the supposed remains of the renowned cedars, but a much greater number of firs, oaks, brambles, mulberry trees, figs, and vines.<sup>c</sup>

The general elevation of Anti-Libanus is inferior to that of the western range; but about its southward termination, where it divides to send its branches east and west of the Jordan, the ridge rises loftily and overtops all the other summits of Lebanon. This highest mountain of the region bears the distinct name of Jebel Essheikh, and is, unquestionably, the Mount Hermon, the perpetual snow of whose far-seen summit is more than once alluded to by the sacred writers. (1) Our information concerning Anti-Libanus generally is less complete than that which we possess respecting the parallel range. We know, however, that it has fewer inhabitants, and is scarcely anywhere cultivated. Indeed, it is not equally cultivable: for it would appear, from a comparison of the dispersed notices in Burckhardt, that its western declivities towards the great valley of Baalbec (Cœle-Syria), are completely barren, without trees or pasture; but on the summits and on the eastern side, facing the plains of Damascus, there appear at least to be parts affording good pasturage, and abounding also in stunted oak-trees, of which few are higher than from twelve to fifteen feet. The common route across these mountains, from Baalbec to Damascus, at one time ascends into the region of snow (in March); at another, follows the direction of the mountain torrents, between parallel lines of hills, by the side of aspens, of oaks, and numerous willows by the water-courses.<sup>d</sup>

Leaving now the mountains of Lebanon, and following the branch which passes into Palestine, we observe that the mountains become less high and rugged, and more fit for tillage. They rise again to the south-east of Mount Carmel, are covered with woods, and afford most pleasant prospects; but as we advance towards Judea, they lose their verdure, the valleys grow nar-

<sup>a</sup> Burckhardt's 'Syria,' p. 4.

<sup>b</sup> Burckhardt, pp. 19, 20, 23.

<sup>c</sup> Volney, vol. i. p. 272.

<sup>d</sup> Burckhardt, iv. 15. Elliot, ii. 276.

rower, they become dry and stony, and form at the Dead Sea a pile of desolate rocks, full of caverns and precipices.\*

There appears to be considerable general resemblance in the *progressive* characteristics of the mountain chains of both the east and west, as far as the southern extremity of the Asphaltic Lake, if not farther. But as we shall, in another part of this chapter, consider, somewhat at large, the mountains of the eastern country, we shall not dwell on this matter now.

The preceding view has been too rapid to include those descriptive details which are of the most interest to the general reader, or to notice those particular eminences which claim consideration, either from their prominent importance among the physical characteristics of the country, or from their connection with some of the events which the history of Palestine records. Commencing, therefore, again with Lebanon, we shall proceed from thence southward, noticing the principal mountains which occur first in the west and then on the east of the Jordan.

We are glad that this arrangement enables us to introduce Volney's correct and animated description of Lebanon, which we now give in his own words:—

“Lebanon, which gives its name to the whole extensive chain of the Kesraoun and the country of the Druses, presents us everywhere with majestic mountains. At every step we



[Distant view of Lebanon.]

meet with scenes in which nature displays either beauty or grandeur. When we land on the coast, the loftiness and steep ascent of this mountainous ridge, which seems to enclose the country, those gigantic masses which shoot into the clouds, inspire astonishment and awe. Should the anxious traveller then climb those summits which bounded his view, the wide-extended space which he discovers becomes a fresh subject of admiration. But completely to enjoy this majestic scene, must he ascend to the very point of Lebanon, or the *Sannin*. There, on every side, he will view an horizon without bounds; while in clear weather the sight is lost over the desert which extends to the Persian Gulf, and over the sea which bathes the coasts of Europe. He seems to command the whole world, while the wandering eye, now

\* Volney, vol. i. p. 272.

surveying the successive chains of mountains, transports the imagination in an instant from Antioch to Jerusalem; and now approaching the surrounding objects, observes the distant profundity of the coast, till the attention, at length fixed by distincter objects, more minutely examines the rocks, woods, torrents, hill-sides, villages and towns; and the mind secretly exults at the diminution of things which formerly appeared so great. He contemplates the valley, obscured by stormy clouds, with a novel delight, and smiles at hearing the thunder, which had so often burst over his head, growling beneath his feet; while the threatening summits of the mountain are diminished till they appear like the furrows of a ploughed field, or the steps of an amphitheatre; and he feels himself flattered by an elevation above so many great objects, on which pride makes him look down with a secret satisfaction.

“When the traveller visits the interior parts of these mountains, the ruggedness of the roads, the steepness of the descents, the height of the precipices, strike him at first with terror; but the sagacity of his mule soon relieves him, and he examines at leisure those picturesque scenes which succeed each other to entertain him. There, as in the Alps, he travels whole days to such a place that was in sight at his departure: he winds, he descends, he skirts the hills, he climbs; and in this perpetual change of position it seems as if some magic power varied for him at every step the decorations of the scenery. Sometimes he sees villages as if ready to glide from the steep declivities on which they are built, and so disposed, that the terraced roofs of one row of houses serve as a street to the row above them. Sometimes he sees a convent standing on a solitary eminence, like Mar Shaya, in the valley of the Tigris. Here is a rock perforated by a torrent, and becoming a natural arch, like that of Nahr el Leben.<sup>a</sup> There another rock, worn perpendicular, resembles a lofty wall. Frequently on the sides of hills he sees beds of stones stripped and detached by the waters, rising up like artificial ruins. In many places, the waters, meeting with inclined beds, have undermined the intermediate earth, and formed caverns, as at Nahr el Kelb, near Antoura; in others are formed subterraneous channels, through which flow rivulets for a part of the year, as at Mar Elias el Roum and Mar Hanna;<sup>b</sup> but these picturesque situations sometimes become tragical. From thaws and earthquakes, rocks have been known to lose their equilibrium, roll down upon the adjacent houses, and bury the inhabitants: such an accident happened about twenty years ago, and overwhelmed a whole village near Mar-djordjos, without leaving a single trace to discover where it formerly stood. Still more lately, and near the same spot, a whole hill side, covered with mulberry trees and vines, was detached by a sudden thaw, and sliding down the declivity of the rock, was launched altogether, like a ship from the stocks, into the valley. Hence arose a whimsical but reasonable litigation, between the proprietor of the original ground and the owner of the emigrated land; the cause was brought before the emir Yusef, who indemnified both parties for their mutual losses. It might be expected that such accidents would disgust the inhabitants of those mountains; but, besides that they are rare, they are compensated by an advantage which makes them prefer their habitations to the most fertile plains: I mean the security they enjoy from the oppressions of the Turks. This security is esteemed so valuable a blessing by the inhabitants, that they have displayed an industry on those rocks which we may elsewhere look for in vain. By dint of art and labour they have compelled a rocky soil to become fertile. Sometimes, to profit by the water, they conduct it by a thousand windings along the declivities, or stop it by forming dams in the valleys: while in other places they prop up ground, ready to crumble away, by walls and terraces. Almost all these mountains, thus laboured, present the appearance of a flight of stairs, each step of which is a row of vines or mulberry trees. I have reckoned from 100 to 120 of these gradations in the same declivity, from the bottom of the valley to the top of the eminence.”

If the traveller seeks on the northern shores of the Lake of Gennesareth for the ruins of Capernaum, that city “once exalted unto heaven,” but now utterly “cast down,” and pauses in his search to survey the mountains by which the lake is inclosed, he observes to the north

<sup>a</sup> Or “River of Milk.” It falls into the Nahr el Salib, called also the River of Beirut: this arch is upwards of 160 feet long, 85 wide, and near 200 high above the torrent.

<sup>b</sup> “These subterraneous rivulets are common throughout Syria. There are some at Damascus, at the sources of the Orontes, and at those of the Jordan.” The last we shall soon have occasion to notice.

of him, hill rising above hill in beautiful succession, and that the loftiest visible eminence is crowned by a castellated city, whose commanding situation is, perhaps, unrivalled in the world. If this strange prospect tempts his feet to the ascent, he is surprised to find the task less arduous than he had anticipated. Gradually one mountain after another is left below; and at last he arrives at a pyramidal hill which overtops them all, and on the extreme summit of which the city stands. This city now bears the name of Safet, and is thought to represent the Bethulia of which so much mention is made in the Book of Judith; and it is also, with very sufficient probability, supposed to be that city to which Jesus Christ, when preaching in this neighbourhood his famous Sermon on the Mount, directed the attention of his audience, when he reminded them that "a city set on a hill cannot be hid."\* (\*) The elevation of the mountain attracts the clouds, and at Safet rains are frequent.

MOUNT TABOR is the highest mountain in Lower Galilee, and one of the most striking in the Holy Land. It stands at the north-east of the great plain of Esdraelon; and although



[Mount Tabor.]

surrounded by chains of mountains on nearly all sides, it is the only one that stands entirely aloof from its neighbours, although it appears to us questionable whether it may not itself be regarded as the bold termination of a branch thrown out by the chain which encloses on the west the Lake of Tiberias. There is such a branch, and the connection between it and this mountain appears to be very close.

The figure of Mount Tabor approaches that of a semisphere, and offers a very regular appearance. Its ground figure is usually described as round, and, indeed, seems to be perfectly so to those coming from the midst of the great plain or from the Sea of Galilee; but it is really somewhat more long (from east to west) than broad, so that its true figure inclines to oval. This is most clearly seen when the mountain is viewed from the hills of Nazareth. The height of Mount Tabor has been loosely guessed not to exceed 1000 feet above the level of the plain; but it has not been subjected to any accurate measurement, nor have its dimen-

sions been stated with reference to any other standard than that of time. From this it appears to take three hours to travel round the base of the mountain; that an hour is generally required to reach the summit by a circuitous path, but that the ascent may be accomplished in three-quarters of an hour, or even half an hour by a forced exertion; and that the plain upon the top of the mountain is almost half an hour in circuit.

The mountain is inaccessible except on the north, where the ascent offers so little difficulty that there are few parts which suggest to the traveller the prudence or necessity of dismounting from his horse. This remarkable mountain offers so rare a combination of the bold and beautiful, that pilgrims of all ages have expatiated upon its glories with untiring wonder and delight. The trees of various species,<sup>a</sup> and the bushes always green, with which it is invested, and the small groves with which it is crowned, contribute no less than its figure to its perfect beauty. Ounces, wild boars, gazelles and hares are among the animals which find shelter in its more wooded parts; while the trees are tenanted by "birds of every wing," whose warblings and motions beguile the fatigue of the ascent. "The path," says a late traveller, "wound around the mountain, and gave us a view from all its different sides, every step presenting something new, and more and more beautiful, until all was completely forgotten and lost in the exceeding loveliness of the view from the summit. Stripped of every association, and considered merely as an elevation commanding a view of unknown valleys and mountains, I never saw a mountain which, for beauty of scene, better repaid the toil of ascending it."

The objects which are embraced by "the view from the top," thus admirably alluded to by Mr. Stephens, have been carefully enumerated by the Rev. C. B. Elliot in a passage which we here introduce, as calculated to give a very useful idea of the relative bearing of different mountains seen from this great central point. "The view it commands," he says, "is magnificent. To the north, in successive ranges, are the mountains of Galilee, backed by the mighty Lebanon; and Safet, as always, stands out in prominent relief. To the north-east is the Mount of Beatitudes, with its peculiar outline and interesting associations; behind which rise Great Hermon, and the whole chain of Anti-Lebanon. To the east are the hills of the Haouran, and the country of the Gadarenes, below which the eye catches a glimpse of the Lake of Tiberias, while to the south-east it crosses the valley of the Jordan, and rests on the high land of Bashan. Due south rise the mountains of Gilboa, and behind them those of Samaria, stretching far to the west. On the south-south-west the villages of Endor and Nain are seen on the Little Hermon. Mount Carmel and the Bay of Acre appear on the north-west [west by north?]; and towards them flows, through the fertile plains of Esdraelon, 'that great river, the river Kishon,' now dwindled into a little stream. Each feature in this prospect is beautiful: the eye and mind are delighted; and, by a combination of objects and associations unusual to fallen man, earthly scenes, which more than satisfy the external sense, elevate the soul to heavenly contemplations."

The beautiful upper plain is inclosed by a wall,—probably the same which was built by Josephus, when governor of Galilee,—and contains some ruins, which are probably those of the two monasteries which, according to William of Tyre, were built here by Godfrey of Bouillon, in the place of others of earlier date which the Moslems had destroyed. The plain has at different times been under cultivation; but when, from oppression or fear, abandoned by the cultivator, it becomes a table of rich grass and wild flowers, which send forth a most refreshing and luxurious odour. In summer the dews fall copiously on Tabor, and a strong wind blows over it all day. Thick clouds rest upon its head every morning, and do not disappear till noon.

The mountain is the scene of some historical circumstances, which it will be our future duty to record; but its chief interest to the Christian pilgrim arises from the very old tradition which points it out as the place where Christ appeared in glory with Moses and Elias.<sup>b</sup>

Beyond Mount Tabor, five miles to the south-south-west, a range of hills extends for several miles from east to west. This range is of no considerable elevation, and is fertile and proper for pasturage. At its foot there are some natural caves, formerly used for sepulchres, but in

<sup>a</sup> Burckhardt says chiefly oak and wild pistachios. 'Syria,' p. 334.

<sup>b</sup> Nau, 623-9; Morison, 208-17; Burckhardt, 332-6; Stephens, ii. 317-19; Elliot, ii. 364.

which the Arabs now stable their horses. The range claims to be noticed, as it is commonly regarded as the "Mount Hermon" which the Psalmist celebrates for its pastures and abundant



[Mountains of Galilee and Samaria. \*]

dews.<sup>b</sup> It is therefore called the Little Hermon, to distinguish it from that snow-capped range of Anti-Lebanon, to which also the name of Hermon has been applied.

In the same quarter, to the south and south-east of Tabor, another range of hills, separated in one part from the Little Hermon by a valley six miles broad, advances to the borders of the Jordan near Bysan, the ancient Bethshan or Scythopolis; and, for some miles northward from thence, continues to bound on the west the valley of that river. This group of hills rises to the height of 800 feet above the level of the road, and is, perhaps, 1000 feet above the level of the Jordan. This lengthened ridge rises up in peaks, and bears a little withered grass and a few scanty shrubs scattered about in different places. In this sterile and arid character these hills are remarkably distinguished from those of the lesser Hermon, and indeed from all other mountains in this neighbourhood, which are in most parts covered with trees and copses, herbs, flowers and grass. This range is the Mount Gilboa of Scripture, by which name (Jebel Gilbo) the natives still call it; and its peculiarly desolate character was ascribed by most of the old travellers to the poetical imprecation of David upon the mountains where "the shield of the mighty was vilely cast away," in the words "Ye mountains of Gilboa, let there be no dew, neither let there be rain upon you, nor fields of offerings." (2 Sam. i. 21.) But this is, perhaps, assigning too literal a sense to the denunciations of the royal poet, since it is admitted that ample dews and heavy rains have been experienced by travellers upon these very mountains.<sup>c</sup>

On the maritime shore, nearly east of Tabor, occurs the only very prominent headland which the generally low and even coast of Palestine offers. This headland forms the seaward

\* This view is taken on the road from Nazareth southward. The mountain to the right, in the foreground, is alleged to be that from which the people of Nazareth designed to cast Jesus down: the rest of the field shows part of the plain of Esdraelon, with the heights of Little Hermon, and, in the distance, the mountains of Samaria, among which the town of Nablous (Shechem) is situated.

<sup>b</sup> Psalm xlii. 6; lxxxix. 19.

<sup>c</sup> Borchardus Terræ Sanctæ Descriptio, p. 308; Cotovicus, 347; Morison, 216, 217; Richardson, ii. 424; Elliot, ii. 360, 361.



termination of a mountain range to which, and more particularly to the promontory itself, belongs the name of Carmel—so renowned in the Hebrew annals, and in the history of the Crusades. This promontory incloses on the south the bay of Acre; and its ridge then retires from the coast, south-eastward, to join the central chain, which we have described as prolonged from Lebanon. Regarded in the reverse direction, it is a branch of this chain, the promontory being then its termination. This connection may very clearly be traced; but attention being restricted to the part more immediately connected with the promontory, and partaking in its sensible characteristics, it extends about seven leagues. Its elevation, even in the highest part, where it fronts the sea, is comparatively moderate;<sup>a</sup> but it commands very extensive views, and its general beauty has been mentioned with intense admiration from the time of Solomon (Cant. vii. 5) till now. In front the view extends to the distant horizon, over the dark-blue waters of the Mediterranean; behind stretches the great plain of Esdraelon, and the mountains of the Jordan and Judea; below, on the right hand, lies the city of Acre, diminished to a mere speck; while, in the far distance beyond, the eye rests on the summits of Lebanon; and, turning to track the coast on the left hand, takes in the ruins of Cæsarea—the city of Herod and the Roman governors of Palestine.

The interior of Galilee and Samaria is often obscured by fogs; but the heights of Carmel enjoy a pure and enlivening atmosphere, calculated to render mere existence a delight. The continual verdure which covers the mountain scarcely allows the whiteness of its calcareous rocks to appear. The pine, oak, olive, laurel, and many other trees, grow (but not to any considerable size) above a beautiful carpet of grass and wild flowers; and this rich covering of grass and flowers extends to the fine prairies around, by virtue of the numerous streams which come to them from the mountain. The forests and woods of Carmel offer a verdure which passes not away at any season; from the number of the shrubs and plants which in their turns succeed each other. To these woods numerous wild animals resort; and birds, still more numerous, attracted by the abundance of suitable food, and by the streams which wind through the valleys of Carmel, enliven, by the harmony of their varied songs, one of the most beautiful spots which this very beautiful world affords.<sup>(c)</sup>

At that time, when those mountains of the Holy Land, with which any Scriptural incidents could be connected, were crowded with persons who deemed it meritorious to withdraw from the turmoil of the world, the caves of this mountain were occupied by thousands of such persons, and its sides were covered with the chapels in which they worshipped, and the gardens which they cultivated. The grottos still exist; many ruins of the ecclesiastical erections of this time are dispersed upon the mountain; and some of its products seem to offer evidence of the cultivation to which it was then subject: but now, after many ages, it may be supposed to have reverted to somewhat of that more natural condition in which it probably appeared when the Hebrew poets and prophets celebrated the "excellency of Carmel."<sup>b</sup>

Crossing the plain of Esdraelon, we leave Galilee, and arrive among the beautifully-wooded hills of Samaria, which exhibit scenery very different from that of the mountains of Galilee. Among numerous venerable olive woods, towns and villages are scattered in every direction, and some of the views rival those of Switzerland.

The singularity and historical importance of the twin mountains of Ebal and Gerizim, in Samaria, entitle them to notice. They are, perhaps, as Josephus describes, the highest mountains in Samaria, but they do not appear to be elevated above 700 or 800 feet from the valley, although their elevation above the sea-level is much greater, the ground being here considerably elevated. The two mountains are separated only by a narrow valley, and they exhibit a remarkable analogy of size, figure, and height. It was perhaps for this reason, as well as from their convenient proximity, with a valley intervening, that, on taking possession of the Promised Land, it was ordered that assembled Israel should hear and respond to the curses of the law, declared from Mount Ebal, and to its blessings from Mount Gerizim. The blessings and the curses may seem to have remained upon these mountains; for, while Gerizim is fertile and of pleasant aspect, Ebal is utterly barren. This superiority of Gerizim may be owing, not only to

<sup>a</sup> The only estimate which we have seen makes it 1500 feet, which, from a comparison of circumstances, seems a considerable exaggeration.

<sup>b</sup> Morison, liv. ii., ch. 33; Nau, liv. v., ch. 21; Zuallart, liv. ii., ch. 2; Malte Brun, in 'Syrie'; Skinner, ch. v.; Stephens, iii. 343.

its having a northern aspect on the side towards the valley, so that it is less than Ebal scorched by the hot suns of summer, but to its slope of ascent being less abrupt, so that the soil is more liable to accumulate on its surface, and less subject to be washed down by the autumnal rains. Gerizim was deemed by the Samaritans the holiest of mountains; and upon it they had their temple, in which, rather than in that at Jerusalem, they held that men ought to worship. The temple exists no longer; but a remnant of the people and of their worship still lingers in the valley below, where is still the city called Shechem in the Old Testament, and Sychar in the New, and whose classical name of Neapolis is now exhibited in the modern one of Nablous.

The valley which divides the mountains, and in which the thousands of Israel were congregated, is more than a league in length, but only from 200 to 300 paces broad. This valley, shaded with groves of figs, olives, almonds, and apricots, bounded by high mountains, and with a clear and beautiful stream winding and murmuring through its centre, is one of the most beautiful in Palestine.<sup>a</sup>

Judea, the southern part of Palestine, is a country full of hills and valleys, conformably to the Scriptural intimations. The hills are generally separated from one another by valleys and torrents, and are for the most part of moderate height, uneven, and seldom of any regular figure. The rock of which they are composed is easily converted into soil, which, being arrested by terraces, when washed down by the rains, render the hills cultivable in a series of long, narrow gardens, formed by these terraces, from the base upwards. Thus the hills were cultivated in former times most abundantly, and were enriched and beautified with the olive, the fig-tree, and the vine; and thus the limited cultivation which now subsists is still carried on. But when the inhabitants were rooted out, and cultivation abandoned, the terraces fell to decay, and the soil which had collected on them was washed down into the valleys, leaving only the arid rock, naked and desolate. This is the general character; but in some parts the hills are beautifully wooded, and in others the application of the ancient mode of cultivation—under which the valleys are covered with corn, while the terraced hills are clothed with fig-trees, olive-trees, or vines—suggests to the traveller how rich this country once was, and still might be, and how beautiful was the aspect which it offered.<sup>b</sup>

All these characteristics of desolation apply with peculiar force to that portion of Judea<sup>c</sup> which formed the inheritance of Benjamin. Its most favourably-situated mountains are wholly uncultivated; and, perhaps, in no other country is such a mass of rock exhibited without an atom of soil. In the eastward, towards the termination of the Jordan and the head of the Dead Sea, this district takes a naturally stern and grand character, such as no other part of Palestine offers; and higher mountains occur than in any other part of the southern country.

Here the road from Jerusalem to the plain of Jericho, after a few miles, leads to and traverses the sternest and most desolate mountain wilderness in all Palestine. The ridge of mountains in this singular district which immediately faces the plain, forming part of the mountains which inclose the valley of the Jordan, is the highest in Judea. They bear the name of Quarantania, from an ancient opinion that the wilderness which they form was that in which Christ remained for forty days fasting, after he had been baptized in the river Jordan; and that the highest summit of the ridge is that "exceeding high mountain" from which the devil showed him "all the kingdoms of the world, and the glory of them." (Matt. iv. 8.) Speaking of this wild region, Morison says, "I am persuaded that there are very few deserts in the world so frightful as this; and I am compelled to acknowledge that, melancholy as are the vast solitudes of Arabia Petræa, which I traversed in my journey from Egypt to Sinai, they are altogether pleasant in comparison to this." Maundrell bears similar testimony, calling it "A most miserable, dry, and barren place, consisting of high rocky mountains, so torn and disordered, as if the earth had suffered some great convulsion, in which its very bowels had been turned outward."

<sup>a</sup> Elliot, ii. 380; Buckingham, ch. 29; Morison, liv. ii., ch. 10. Stephens (the recent American traveller) says that, till he came here, from the south, he had thought that he would not give the estate of a wealthy gentleman in Geueseeo for the whole kingdom of David.

<sup>b</sup> Marti, ii. 362; Elliot, ii. 407, 408.

<sup>c</sup> By Judea we are to be understood as meaning, not merely the territory of the single tribe of Judah, but the kingdom of Judea as distinguished from that of Israel.

Of the Mountain of Temptation<sup>a</sup> the ascent is so difficult and perilous, that many travellers of no ordinary enterprise have desisted from the attempt to reach its summit. Of this number was Hasselquist, who describes the mountain as "high and pointed; and on our left as we ascended, towards which the rock was perpendicularly steep. It consists of a loose, white limestone, mixed with another that is grayish and harder. The way up to its highest point is dangerously beyond imagination. It is narrow, steep, full of rocks and stones, which obliged us frequently to creep over them before we could accomplish our design. The difficulty is increased by the valley on one side; which, besides its terrible aspect, is most dangerous, as, in case any one should slip, his death would be certain. I went as far up on this terrible mountain as prudence would permit, but ventured not to proceed to the summit." We suppose he went up two-thirds of the mountain, the ascent of which is attended with more fatigue than danger; but the remaining third is so formidable, that few even of the old pilgrims, though actuated by the fervour of religious zeal, ventured to the summit; and those who did, described it as the most perilous undertaking of their lives. The view from the top, however, well repays the fatigue and danger of the enterprise: it embraces the whole extent of the Dead Sea, and beyond it the plains of Moab, and Mount Pisgah, whence Moses viewed the Promised Land; while just under the eye are the plains of Jericho and the river Jordan. This mountain, like the others of the same ridge, is full of caves, of various form and size, which have alternately offered secure retreats to fugitives, recluses, and robbers.<sup>b</sup> Such caves are, indeed, most numerous among the steep and rugged mountains at the northern extremity of the Dead Sea on this side the Jordan; which, except in being of much less elevation, offer the same essential characteristics as the mountains of Quarantania.

Of Judea Proper, the most mountainous part is the country around Jerusalem, and between it and the head of the Asphaltic Lake. More to the south, the *breadth* of the country is less occupied by mountains, which are confined chiefly to the central ridge: its dependent hills and its disparted branches, which are sent forth to divide and diversify the plains,—which extend, on the one hand, to the shores of the Mediterranean, and, on the other, to the barren and high rocks which thickly set the western shore of the Dead Sea,—are of such essential form and character as we have already described. The naked hills prevail most in the north and south of Judea, and occur frequently in other parts. Cultivation on the hills is most common for about half the distance from Jerusalem to Hebron, southward; and, in the other half, the uncultivated hills are more or less wooded. The only mountain in this region, which is seen from far, and seems to require particular notice, is that one, nearly detached, which rises about five miles to the south-east of Bethlehem. It is called the "Franks' Mount," from its having been fortified and held by the Christians many years against the Moslems during the Crusades. The summit still exhibits some ruins of the strong castles which they built there. The situation would seem almost impregnable, for the mountain is very high and rugged, and so steep that Nau, the only traveller by whom we can find it to have been ascended, was obliged to dismount at its base, and climb on foot to its top.<sup>c</sup>

None of the other mountains of Palestine Proper are, separately, of such physical or historical importance as to require notice in this part of the present work. But its historical portion will be found to characterise, as occasion requires, most of the hills and hilly districts of the country.

We must now proceed to view the more remarkable mountains in the country beyond the Jordan. For this our materials are still very inadequate. But this will be the less sensibly felt, as few of the mountains of this part of the country are of such Scriptural or historical renown, as to create the consciousness of need for that information which, if felt to be wanted, could not be very perfectly supplied.

Jebel Essheikh, which forms the natural northern frontier of Palestine beyond Jordan, has already been noticed. This mount sends a branch or continuation southward, which, under

<sup>a</sup> Such is the name usually given it; but the old French travellers often also call it *Mont du Diable*.

<sup>b</sup> Hasselquist, 128; Maundrell, 79; Morison, 523; Sarius, 493.

<sup>c</sup> Seetzen, 41; Hasselquist, 126; Roger, 182; Nau, 439.

the name of *Jebel Heish*, extends about twenty-five miles, terminating in the *Tel Faras*, at a distance of about ten miles eastward from a point somewhat below the head of the *Lake of Gennesareth*. The ground traversed by this chain is much elevated above the eastward plains of *Damascus* and *Djolan*; so that, seen from thence, it appears to be composed of considerable mountains: but when the traveller, having gradually ascended from the plains, comes near to them, they appear to be of very moderate elevation.<sup>a</sup>

For twenty-four miles (eight hours) to the south of the termination of the *Jebel Heish*, is an open country, equally divided by the river *Jarmouk*. This open country contains the famous pasture lands of *Argob* and part of *Bashan*. Eastward, this land slopes to the plains of the *Haouran*, and westward it is interrupted by the steep descents to the *Lake of Gennesareth* and the valley of the *Jordan*. And here it may be proper to observe, that the general level of the plain country beyond the *Jordan* is high above the valley of that river, which offers one of the lowest levels in all *Syria*.<sup>(\*)</sup> This large space of open country may be called flat in comparison with the hilly region to the south; and, viewed from a distance, appears more flat than it really is; for, besides that the ground has a gradual descent towards the eastern plains, it is intersected by numerous deep valleys, rich in pastures.

Beyond this district the mountains rise again, and increase in altitude and breadth as they traverse, or rather fill, the country of *Gilead* and beyond the river *Jabbok*. In this part the mountains are in higher and broader masses than anywhere else on this side the *Jordan*; and here, as we have hitherto done, we shall notice the more prominent points, without attempting to discriminate the various ridges and branches which it offers.

The part of *Gilead*, north of the *Jabbok*, is comprehended in the modern districts of *Belad Beni Obeid*, *Adjeloun*, and *Moerad*. All these are mountainous districts throughout, and are more or less wooded, particularly with the oak and wild pistachio. The wood is most abundant in *Adjeloun*. The mountains of *Moerad* are the highest and most dense. The principal points in these districts are, the mountain of *Kafkafa*, a long and broad mountain facing the eastern plains. On the lower slopes of this calcareous mountain, wild pistachio trees abound; higher up oaks become more frequent and the forest thickens; near the top are some remains of the foundations of ancient buildings, and the summit commands an extensive and beautiful view over the neighbouring mountains and plains. The mountain of *Oeraboun*, which marks the limits between the districts of *Adjeloun* and *Moerad*, is chiefly remarkable for the thickest forest of oak trees which *Burckhardt* had seen in *Syria*. The mountains of *Moerad* contain no points which have attracted particular attention; but it is observed that their higher summits seem to be considerably more elevated than those of the mountains of the southern side of the *Jabbok* (now *Zerka*).<sup>b</sup>

To the south of this river the districts are less subdivided; for the denomination of the *Belka* seems, from *Burckhardt's* use of it, to embrace the whole tract of country between that river and the head of the *Dead Sea*. It appears that a portion of this country, immediately to the south of the *Zerka*, must be understood as included in the Scriptural name of *Gilead*. For this very name, in the modified form of *Jelaad*, is still given to a mountain six miles to the south of that river. This mountain runs, from east to west, about seven miles in length; and upon it are the ruins of two towns, which also bear the names of *Jelaad* and *Jelaoud*. Closely adjoining this mountain rises that of *Jebel Osha*, which far overtops all the other mountains of the *Belka*. It is a fine mountain, well wooded, and its summit gives a very striking view over the valley of the *Jordan*, while *Jericho* is visible at a great distance to the south. The mountain takes its name from a tomb which is supposed to be that of the prophet *Hosea*.

South of the *Zerka* the chain of mountains increases its breadth. And in this inheritance of *Gad* and (partly of) *Reuben*, which the *Belka* forms, the traveller, from the sultry plains of the *Jordan*, is refreshed by the cool winds which blow over this high region: everywhere he finds the grateful shade of the oak and wild pistachio, and looks around upon a scenery more resembling that of *Europe* than he is likely to find in all *Syria*.<sup>c</sup>

Before arriving at the parallel of the *Dead Sea* the mountainous country contracts its

<sup>a</sup> *Burckhardt*, 286, 314.

<sup>b</sup> *Burckhardt*, 246, 248, 265, 286, 288, 289, 290, 314, 346, &c.

<sup>c</sup> *Burckhardt*, 339, 348, 363.

breadth; and about the head of that sea is reduced to the single principal chain, which afterwards enlarges to form the mountains of Seir. This chain, commencing nearly opposite the northern extremity of the Asphaltic Lake, and, at its other extremity, joining Mount Seir, appears to form the mountains which in Scripture bear the name of Abarim. There it is recorded that from Mount Nebo, one of the highest summits of this range, and which, from the context, must have been in its northern part, Moses was permitted to view the Promised Land; and that there he died. Writers disagree as to the situation of this mountain. Nau refers to a mountain near Szalt, evidently meaning Mount Osha, mentioned above; and we should be inclined to agree with him, if it did not seem that this mountain is more to the north than the history will allow. Six miles westward from Heshbon is the situation assigned to Mount Nebo by Eusebius, who is followed by most later writers. It is an excellent position for the *history*; but being unable to learn that the situation is occupied by any eminent mountain, we may, perhaps, with the few travellers who have visited this part of the country, look for it in Mount Attarous, which rises about eight miles to the north of the river Modjeb (the ancient Arnon). This mountain offers the highest summit of the neighbourhood. No traveller seems to have ascended it; and it is only slightly mentioned, in passing, as a tall and barren mountain, on whose summit might be perceived a heap of stones overshadowed by a wild pistachio tree.<sup>a</sup>

We have no information of any noted mountain in the country south of the Arnon. Beyond that river lie wide plains covered with absinthium and other plants and shrubs. But, on approaching Kerek,<sup>b</sup> the country becomes more mountainous; and at this point, beyond the plains of Moab, where the mountains rise again, we should be inclined to fix the commencement of Mount Seir, the southward continuation of which we have already indicated. This forms here, at its commencement, a very mountainous country between Kerek and the end of the Dead Sea; nor is the breadth of mountain country thus indicated much diminished in the southward progress of the chain.<sup>c</sup>



[Mountains of Seir.]

Our attention must next be directed to the mountains which now line, on the east and on the west, the broad valley of Araba, which extends between the Asphaltic Lake and the Red Sea, and through which the river Jordan is believed to have once continued its southward course. The prolongations of Lebanon exhibit a very different character on the opposite sides of this

<sup>a</sup> Reland, 'Palestina,' lib. i. cap. 51; Nau, 365; Burckhardt, 370; Irby and Mangles, 464; Macmichael's 'Journal,' 243.

<sup>b</sup> About twenty-five miles east from the southern extremity of the Dead Sea.

<sup>c</sup> Seetzen, 36-40; Burckhardt, 375, *et seq.*

valley. The western chain of hills is not half as high as those to the east. Burckhardt, after descending the eastern mountains and crossing the valley below, proceeded to ascend the western hills:—"After an hour and a half of gentle ascent, we arrived at the summit of the hills, and then descended by a short and very gradual declivity into the western plains, the level of which, although higher than that of the Araba, is, perhaps, 1000 feet lower than the eastern desert." In that case the height of the eastern mountains must be very considerable, seeing that their elevation above the valley of Araba must be above 1000 feet, by as much more as that valley is *below* the level of the western desert, added to as much as the mountains themselves are *above* the level of the eastern plain. The same traveller had an extensive view over the western chain from the point where he crossed it; and he says that it is intersected by numerous *wadys* in which the tall tree<sup>a</sup> grows. The rock is described by him as entirely silicious, and of the same sort as that of the desert which extends from thence to Suez. But Burckhardt saw too little of this chain to use the word "entirely" with safety; and Laborde, who saw much more of it, says its more southern part, at least, is composed of chalk and limestone; and adds, that its hills are there pretty regular in form, and rise in a tabled shape, not (as more to the north) above the level of the western desert, which there commands a great part of the valley. Lord Lindsay, who crossed this chain in its northern portion, says, "We entered the low barren hills that skirt Wady Araba on the west, and, for several hours during this and the following day, traversed a country of the most utter desolation, hills succeeding hills, without the slightest picturesque beauty, covered with loose flints, sand, and gravel."<sup>b</sup>

The far more important and lofty mountains which bound the valley of Araba on the *east*, form, as we have already had occasion to notice, the proper mountains of Seir of the Scriptures, although we know not that this denomination might not, in its larger acceptation, comprehend also the western hills. They rise very high above the valley, and, as viewed from thence, increase in elevation in the progress to the south. But this increase is only apparent, and owing to the southward slope of the valley, as evinced by the equal level of the eastern plain, beyond the mountains. As viewed from that plain, the mountains have no sensible increase of altitude southward; and from thence, indeed, they only exhibit the appearance of low hills. This is owing to the elevation of the eastern plain, far above the level of the valley. This circumstance is observed, indeed, throughout the country from the Lake of Tiberias southward. From the borders of that lake, or of the Jordan, or of the Dead Sea, the traveller has to make steep and difficult ascents up a succession of tall cliffs and high mountains, on surmounting the highest of which he finds that he has to make but a comparatively slight descent into the eastern plains.

These mountains of Seir must not be understood as a single range of high hills; but as an extensive mountainous region, from ten to twelve leagues in width, forming a rocky belt, separating the Stony Arabia from the eastern deserts of sand. On first viewing these mountains from the *southern* part of the valley of Araba, high rocks of granite appear as if fractured into a thousand different forms. These rocks of granite formation<sup>c</sup> extend almost as far northward as the Wady Gharandel,<sup>d</sup> which is almost half way between the Gulf of Akaba and Petra; they then begin to be covered with chalk and limestone, which extend five leagues to the north and north-east, and then disappear amidst rocks of sandstone veined with oxide of iron, and presenting more fantastic shapes than any other parts of the mountain. How far to the north of Petra these last characteristics extend, we find no authority that states; but we learn from Burckhardt that sandstone continues to be very common as far to the north as the Wady el Ahsa (near the southern extremity of the Dead Sea), after which it occurs but rarely.

That the exterior aspects of these mountains, viewed from the valley, are unusually stern and dark, would appear from the general terms which travellers employ. Lord Lindsay speaks of them as "the black mountains from which the Edomites looked down." And Mr. Stephens, standing on the shore of the northern extremity of the Ælanitic Gulf, saw before him the broad

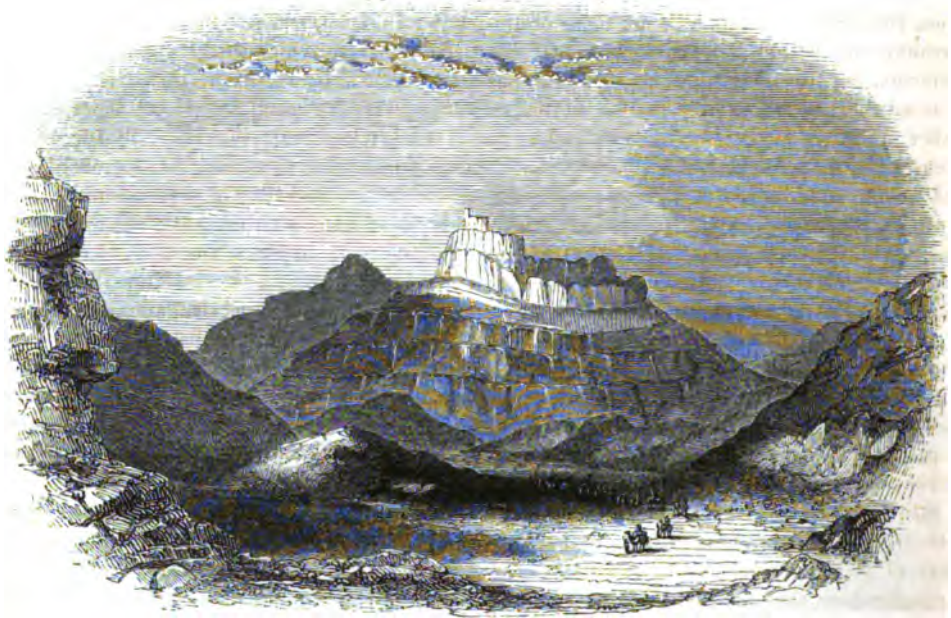
<sup>a</sup> The tree that produces the gum-arabic.

<sup>b</sup> 'Letters on Egypt, Edom, and the Holy Land,' vol. ii. p. 46.

<sup>c</sup> Laborde, whose authority we are following just here, appears to include porphyry, with granite, in this denomination.

<sup>d</sup> The reader must be mindful to distinguish this Wady Gharandel from another of the same name (about mid-way between Suez and Mount Sinai), which we shall hereafter have occasion to mention.

sandy valley of Akaba, "with high, *dark*, and barren mountains, bounding it like a wall." He says, "The land of Idumea lay before me in barrenness and desolation; no trees grew in the valley, and no verdure on the mountain tops. All was bare, dreary, and desolate."<sup>a</sup> The opposite, or eastern, face of these mountains, however, presents a very different appearance, not only from their apparent lowness, owing, as we have already described, to the elevation of the eastern plateau in which they terminate, but from its regular form and unbroken course, and from its being the only part covered uniformly with vegetable mould. This was too important a feature in so stony or sandy a region to have been overlooked, and accordingly we here find numerous marks of ancient cultivation. Stones which have been arranged to mark the limits of fields, as well as the ruins of separate habitations and villages, scattered everywhere over this elevated country, still attest the industry of the ancient inhabitants in cultivating an apparently unfriendly soil.



[Mount Hor.]

The tallest summit among the mountains of Seir is Mount Hor, on which Aaron died, and whose towering bulk is a land-mark to the wanderer afar off in the surrounding deserts. It offers a commanding view over the plains and mountains below. "If I had never stood on the top of Mount Sinai," says the last-cited traveller, "I should say that nothing could exceed the desolation of the view from the summit of Mount Hor; its most striking objects being the dreary and rugged mountains of Seir, bare and naked of trees and verdure, and heaving their lofty summits to the skies, as if in a vain and fruitless effort to excel the mighty pile, on the top of which the high-priest of Israel was buried."

Yet even here all is not barren. The interior of these desolate mountains—their valleys and their hollows—present many a scene of verdure and beauty. While the same writer, in summing up his impressions, remembers that the mountains were barren, solitary, and desolate, and that the higher he ascended their aspect became more wild and rugged, and rose to sublimity and grandeur,—he does not forget that, among these arid wastes of crumbling rock, there were beautiful streams gushing forth from the sides of the mountains; and sometimes small valleys, where the green grass and shrubs and bushes were putting forth in early spring;

<sup>a</sup> 'Incidents of Travel,' vol. ii. p. 41.

and that he saw, among the stony mountains of Arabia Petræa, more verdure than he had observed since he left the banks of the Nile.

The spot which has just been referred to, as that by which travellers are now attracted to the mountains of Seir, is the deep hollow in their bosom, whose tall cliffs offer those wonderful sculptures and excavations of temples, habitations, and tombs, which compose the ancient metropolis of Edom, now but lately revealed, in the freshness of its beauty, to the admiration of nations which have sprung into existence since it became a desolation. Of this spot and this city we have elsewhere<sup>a</sup> spoken, and shall probably, in this work, have some further occasion to speak. This, and other hollows and valleys of these mountains, exhibit some very striking geological characteristics, which, were they properly discriminated, might throw much light on their physical construction. All travellers mention, with wonder and admiration, the beautiful and varied appearance of the rock composing the cliffs which enclose the valley of Petra. "The whole stony rampart that encircled the city," says Mr. Stephens, "was of a peculiarity and beauty which I never saw elsewhere, being a dark ground with veins of white, blue, red, purple, and sometimes scarlet and light orange, running through it in rainbow streaks; and within the chambers, where there had been no exposure to the action of the elements, the freshness and beauty of the colours, in which these waving lines were drawn, gave an effect hardly inferior to that of the paintings in the tombs of the kings at Thebes." Other travellers speak to the same effect; and Lord Lindsay adds that some of the oldest excavations are almost filled with earth, decomposed from the fragments that are constantly flaking off from the roof. "I was surprised," he says, "to find the stone so crumbling: it must have been as easy to cut as chalk: I could break it easily with my fingers." Stephens was informed by the Arabs that no stone veined like the rocks at Petra was to be found elsewhere; which at least shows that *they* knew of none like it.

A few miles to the north of this place is another valley, or rather defile, called Wady Sig. It has only been described by Lord Lindsay, whose description we quote for the sake of the impression of relief which it gives to the general picture, and of the vegetable products which it specifies:—"It is one of the most romantic defiles I ever saw: lofty crags, almost perpendicular, tower on each side, deep fissures yawning in their breasts, tufted with evergreens, and single isolated rocks guarding the pass like sentinels: the road winds through a thick wood of sadder, arrah, oleander, and acacia trees,—every shade of green."

Still more to the north occurs the broadest valley in the whole chain of mountains. It is that of El Ghoeyr, which, being the only one that offers a passage practicable to any large body of people is, with good reason, conceived by Colonel Leake<sup>b</sup> to be the "highway," through which the host of Israel vainly sought the permission of the Edomites to pass from the western desert into the eastern plains.<sup>c</sup> It is described by Burckhardt as a large, rocky, and uneven basin, considerably lower than the eastern plain, upwards of twelve miles across at its eastern extremity, but narrowing towards the west. It is intersected by numerous wadys<sup>d</sup> of winter torrents, and by three or four valleys watered by rivulets which unite below and flow into the great western valley. The Ghoeyr is famous for the excellent pasturage produced by its numerous springs; and it has, in consequence, become a favourite place of encampment for all the Bedouins of these mountains. The borders of the rivulets are overgrown with defle<sup>e</sup> and the shrub rethem.<sup>f</sup> The rock is principally calcareous; and there are detached pieces of basalt, and large tracts of breccia, formed of sand, flint, and pieces of calcareous stone. "Calcareous with basalt" is the character which Burckhardt continues to assign to the still more northern part of these mountains. By this he probably means, as he explains near this, that the body of the mountain is calcareous, with its superficies covered with large basaltic blocks.

The chain of hills is of much less apparent height northward, approaching the Dead Sea, than southward, approaching the Gulf of Akaba; and among the circumstances which in this

<sup>a</sup> 'Pictorial Bible,' notes on 2 Kings xiv. 7; 2 Chron. xxv. 12; Jer. xlix. 15.

<sup>b</sup> Preface to Burckhardt, p. xv.

<sup>c</sup> Numbers xx. xxi.

<sup>d</sup> The word *wady*, spelt by French travellers, *ouadi*, denotes the channel of a stream or river, or any valley or ravine through which a stream flows, whether constantly or only in the winter season.

<sup>e</sup> *Solanum furiosum*.

<sup>f</sup> *Genista Retam*, Forsk.



part render their aspect less stern and desolate, may be mentioned that the mountains are in parts overgrown with short balout trees.

We have now, in the last place, to extend our attention southward to the desert region in which the host of Israel wandered many years, and to the mountains venerable beyond all others, for the associations which the most ancient history in the world connects with them. In the conformities which may still be traced in this wild region, with the indications which that history offers, there is much to engage our attention, even were we to neglect the sacred character of the transactions from which those indications arise. But besides this, the region of Sinai is in itself, apart from the sacred interest connected with its deserts and its mountains, so striking and peculiar as to deserve far more attention than we shall be able to allow it, although we are not without fear that some of our readers, less impressed than ourselves with a sense of the historical and physical interest of this region, may deem that here and in some future pages, we afford it an undue share of our consideration.

The basin of the Arabian Gulf, which in its direction presents some analogy with the bed of the Nile, is, like it, divided into two arms at its northern extremity. The triangular space comprehended between these two arms is known under the name of the peninsula of Sinai, and must be regarded as pertaining to Arabia Petræa. The westernmost of the arms of the Red Sea, which enclose this triangle between them, is called the Gulf of Suez, from the town of that name, situated near its termination; and the easternmost arm bears the name of the Gulf of Akaba, from the fortress which stands near its head. The route of the Israelites, when they visited the mountains of Sinai from Egypt, lay along the borders of the former gulf; and this is the route which travellers now take. In proceeding southward from Suez, they have, for the most part, a range of hills of small importance on their left hand; and these are nearest the road in the north, and gradually recede from it in the progress southward, and ultimately strike off across the peninsula, dividing it, as it were, into two parts. These intersecting hills

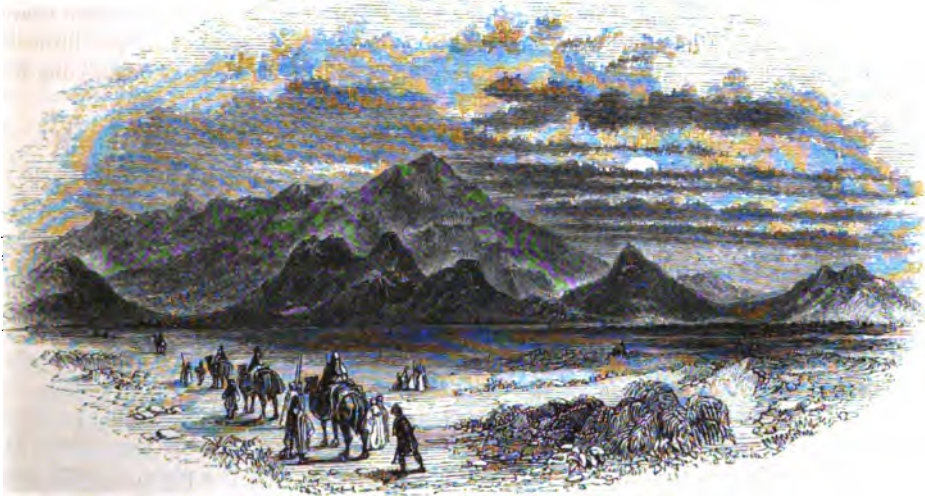


[Mountains of El Tyh, with the Rock of the Pilgrims]

bear the name of El Tyh, or of the *Wandering*, which name also belongs to the northern half of the peninsula beyond them; and are so called by the Arabs in memory of the wanderings of the Israelites. All these hills are of secondary formation, and are markedly disconnected,

not only by this formation, but by broad valleys, from the mountains of the south. The intersecting El Tyh hills, which may be regarded as forming the northern boundary of the Sinai mountains, are the most regular ranges in the peninsula, being almost throughout of equal height, without any prominent peaks, and extending in an uninterrupted line eastward. The opposite coast of this peninsula, on the Gulf of Akaba, which consists of a series of bays separated by projecting head-lands, exhibits, in its tall cliffs and capes, traces of primitive formations which connect it physically with the southern mountains: and we have lately noticed, on the authority of Laborde, that these formations extend into the mountains of Seir as far as the Wady Gharandel.

The proper mountains of Sinai, so renowned in Biblical history, are all in the southern part of the peninsula, or that part which is cut off by the El Tyh hills. This southern part, in the midst of which arises the mountains of Horeb and Sinai, presents a space of nearly 1200 square leagues, covered with primitive mountains, principally porphyritic. All the species of rock which appertain to this formation are here exhibited in an abundance and with a diversity which it would be very difficult to find elsewhere. The French scientific commissioners, MM. Rozière and Coutelle, who made a long sojourn in the peninsula and explored much of this southern region, could think of no mountains which appeared to offer so many analogies as those of the Vosges. The nature of the rocks, their dispositions, accidents, passages, transitions, and the forms and elevations of the mountains, all suggested very striking resemblances.



[General View of Sinai.]

The summits of Mounts Sinai, Horeb, Serbal, and Om Shomar, which are the most remarkable, rise to the height of about 8000 feet above the level of the neighbouring valleys, which are themselves elevated from 500 to 600 feet above the level of the surrounding sea. This region is separated from the foot of the secondary chain of El Tyh by a broad sandy plain, which affords good pasturage in spring, but, being destitute of water, is not much frequented even by Bedouins. This plain, on the land side, seems to correspond to others along the sea border, on both sides, after passing which the ascent begins, through various gently sloping valleys to the high central region of Sinai. We cannot clearly make out what extent Burckhardt gives to an observation which he makes soon after the ascent, by the usual road, begins,—“The ranges of mountains in this country differ in their formation from all the other Arabian chains which I have seen, the valleys reaching to the very summits, where

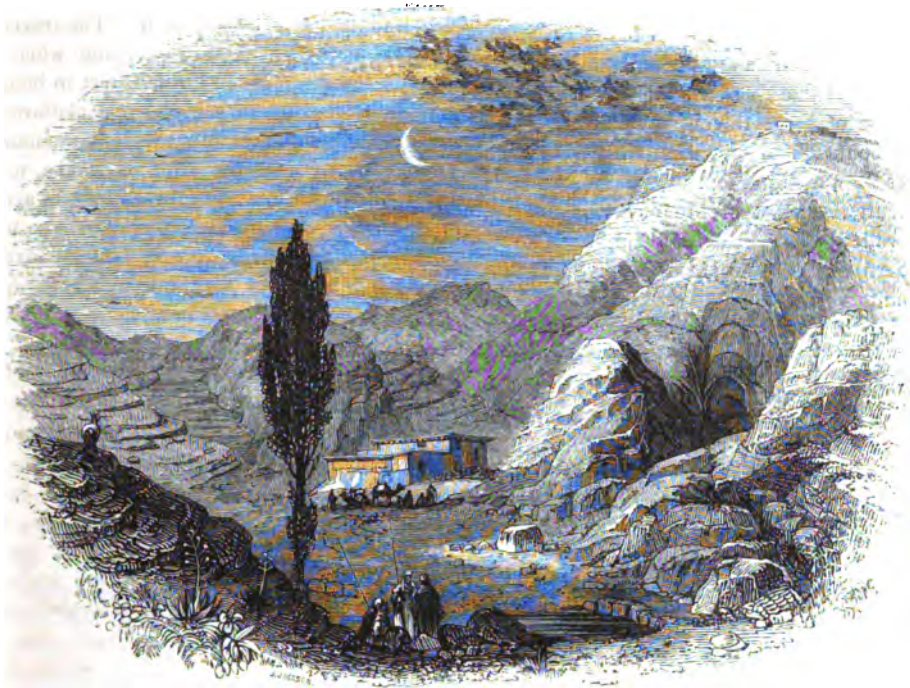
they form a plain, and thence descend to the other side." We suppose this applies not to the valleys in the high central region itself, but to those in the ascent to it. The traveller has the lofty central summits in view several days before he comes to them; and when he reaches their borders, he finds that abrupt cliffs of granite, from 500 to 600 feet in height, their surface blackened by the sun, surround the avenues leading to the elevated platform to which the name of Sinai is more especially applied. Such cliffs enclose the holy mountains on three sides, leaving only the east and north-east sides, towards the Gulf of Akaba, more open to the view. It takes about four hours and a half, after reaching these cliffs, to arrive at the foot of Mount Sinai, through the defile which is followed by these travellers who take the nearest route from Suez. Arriving here, the traveller finds an extensive Greek convent, like a fortress, situated in so narrow a valley, that while one part of the building stands upon the lower slope of Mount Horeb, a space of twenty paces only is left between its walls and the eastern mountains.

The names of Mounts Horeb, Sinai, Moses, St. Catherine, are applied by travellers in such sort, that the reader is often at a loss to distinguish their application; and it is only by a careful comparison of their accounts that he learns that the name of Horeb is now applied to the mountain at whose base the convent stands, and which forms a sort of breast from or upon which rise the twin summits of Mounts St. Catherine and Sinai, which last also bears the name of Moses (Jebel Mousa): or, in other words, that Mount Horeb is the base, and Mounts Sinai and St. Catherine the tallest summits of the same mountain. We shall not in this place examine the claims of these or any other appropriations of sacred names: we have done this in another work,\* where the accuracy of these appropriations are questioned—and possibly a future page may give occasion for some further remarks on the subject. But we are now describing things as they exist, distinguishing them by the names which they currently bear, without pausing to inquire how properly those names have been applied. The name of Sinai, the restricted use of which is thus stated, is, however, applied in a general way, as we have seen, to all these mountains, and, indeed, to the whole of the peninsula.

The summits of Mounts Sinai and St. Catherine are not visible from the valley in which the convent stands; and, unless previously prepared, the traveller is astonished on arriving at the plain at the top of Horeb, to see the formidable ascents which rise before him. A steep ascent up Mount Horeb commences immediately behind the walls of the convent, to facilitate which, steps (said to be 14,000 in number) were anciently cut, even to the summit; but these are now either destroyed or so much damaged by the winter torrents, as to be of very little use. The ascent takes three quarters of an hour, exclusively of the opportunity which the traveller may have taken, after twenty-five minutes' ascent, of breathing a short time under a large impending rock, hard by which is a well of water, cold as ice. At the top of this ascent is a large open space, or small plain, surrounded on all sides by mountains; high above all of which rises the lofty summit of Sinai, by which, from this place, the still loftier summit of St. Catherine is concealed, as both summits had been concealed by Horeb from the valley below. To this part of the mountain the venerable Scriptural name of Horeb is now more especially given; and here pilgrims generally pause before they assay the difficult enterprise before them. In the centre of the plain stands, enclosed by a stone fence, the only tree in the mountain—a cypress, planted by the monks upwards of 100 years since; and near this is a tank which receives the winter rains, and which is alleged to have been dug by the prophet Elias during his sojourn in the mountain. This name is also borne by an old convent, now deserted, containing a grotto which is said to have been his residence.

From this plain, a still steeper ascent of half an hour, the steps of which are also in ruins, leads to the summit of Mount Sinai. The plain at the top of the mountain does not exceed sixty paces in circumference, and on this the ruins of an ancient church are still to be seen, and near this, on a somewhat lower point, is a mosque also in ruins, offering, together, rather

\* 'Pictorial Bible;' note on Exod. xix. 2.



[Summit of Mount Sinai.]

a striking testimony of the concurrent respect with which both Christians and Moslems regard the holy mountain. The Jews make no pilgrimages here, nor do any memorials made with hands attest *their* interest in these mountains. And they need none: the rocks themselves and the wildernesses, the valleys, the palm-trees, the bitter waters, and the bounding gulf—all bear witness, lasting as the world, of the close and marvellous connection of their history with the scenes which this wild region offers.

Some recent travellers have gratified us with an account of what they saw from the summit of this mountain, a view which Burckhardt was prevented by a thick fog from enjoying. If he had not left us a full and clear account of what he afterwards perceived from the adjoining and higher summit of St. Catherine, this might be much regretted, as few travellers equal him in the avoidance of vague general expressions in description, and in the precision and fulness of his information. In the present instance, Sir Frederick Henniker tells us that if he had to represent the end of the world, he would model it from Mount Sinai: and afterwards he calls it "a sea of desolation;" adding, "it would seem as if Arabia Petræa had once been an ocean of lava, and that while its waves were literally running mountains high, it was commanded suddenly to stand still." Laborde, on arriving at the summit, was surprised at the briskness of the air. The eye sought in vain, he says, to catch some prominent object among the chaos of rocks which were tumbled around the base, and vanished in the distance in the form of raging waves. Nevertheless, he distinguished the Red Sea, the mountains of Africa, and some summits of mountains which were easily recognizable by their shapes; as Om Shomar, by its rounded masses, Serbal, by its shooting points, and El Tyh, by its immense prolongation. Mr. Stephens, the recent American traveller, also gives an animated glance at the "bleak solitudes and terrible majesty of Sinai," and is particularly impressed by the sacred associations of "the holy mountain." That this was really the "holy mountain" we very much doubt: but whatever truth or beauty exists in the feelings which are excited in this or other travellers by sacred associations, are, here at least, scarcely affected by questions respecting the identity of particular mountains; for while these do not considerably differ in altitude or formation, and it is rather

by the whole scene than by the particular mountain that these feelings are excited, there is no question that this region is the scene of the wondrous transactions recorded in the sacred books ;—that these are the mountains which quaked when the Lord came down in fire upon them ; and that these are the valleys which then heard his voice.

None of these travellers whom we have cited thought it worth their while to ascend to the neighbouring and somewhat taller summit of St. Catherine—an inappropriate name, which it takes from a stupid legend about a female “saint” so called. The ascent is considerably more difficult than that of Mount Sinai : and those who contemplate the ascent usually go down to the valley which separates them, and remain till the next morning in the small convent of El Erbayn, or the Forty [Martyrs]. Some, however, return to the great convent at the foot of Mount Horeb, making separate expeditions of the two ascents. Of this number was the candid old traveller Morison, who, with others, tells us that this mountain is not only higher than its neighbour, but is distinguished from it by having no ascending pathway, or any trace of the course by which it is usually mounted ; so that, without such experience as the guiding monks possess, the pilgrim might stray a hundred times from the right track. One of his party lost heart at a third of the ascent, and returned to the convent ; and Morison ingenuously confesses that, as he proceeded, he weighed three or four times in his mind the propriety of following this example, rather than of persisting in an undertaking of apparently so much peril and difficulty. “We found, in fact,” he says, “certain points which it seemed little easier to surmount than to scale the skies ; nevertheless, animated, in the end, by the example of our Greek monks, who scrambled up like cats, and finding here a small hollow in which I could rest the point of my foot, and there a ledge which I could grasp with my hand, I at last reached the summit.” From the more explicit information of Burckhardt it appears that the worst part is on approaching the highest part of the mountain, which consists of a single immense block of granite, the surface of which is so smooth as to render the ascent very difficult. This mountain, at least, is not steril. The ascent takes two hours. The side of this mountain is noted for its excellent pasturage ; herbs sprout up everywhere between the rocks, and, as many of them are odoriferous, the scent, early in the morning, when the dew falls, is delicious. This luxuriant vegetation reaches up to the granite block which caps the mountain ; which thus, upon the whole, presents a verdure which, had it been turf, instead of shrubs and herbs, would have completed the resemblance which it bears to some of the Alpine summits. The summit of this mountain, like that of Mount Mousa, terminates sharply, and upon it there is nothing remarkable save a small ancient oratory, built of loose uncemented stones, and hardly high enough within to allow a person to stand upright.

The summit of Mount St. Catherine commands a most extensive view of the whole region in which it stands. The details comprehended in this magnificent view have been laid down by Burckhardt with admirable precision ; and the substance of his statement, with contributions from other sources, is necessary to complete the picture of this most interesting region, with which we are endeavouring to furnish our readers.

From this elevated peak the directions of the different surrounding chains of mountains, and of the valleys which divide and intersect them, can be distinctly traced. It is from hence seen that the upper nucleus of the Sinai, which is composed almost entirely of granite and porphyry, forms a rocky wilderness of an irregular, circular shape, intersected by many narrow valleys, and from thirty to forty miles in diameter. It contains the highest mountains of the peninsula ; and their shaggy and pointed peaks, and steep and shattered sides, render it clearly distinguishable from all the rest of the country in view. It is upon this highest region of the peninsula that the fertile valleys which produce fruit-trees are found ; and these are principally at the distance of three or four hours’ journey from the convent, to the west and south-west. Water, from the numerous mountain springs, abounds in all this region ; and hence the comparative fertility of the valleys ; for vegetable mould either does not exist, or is so scanty, that the gardens of the convent are supplied with earth brought all the way from Egypt on the backs of camels : but in this climate, wherever water is abundant, the very rocks will produce vegetation. It is hence the refuge of all the Bedouins of the peninsula (about 4000 in number)

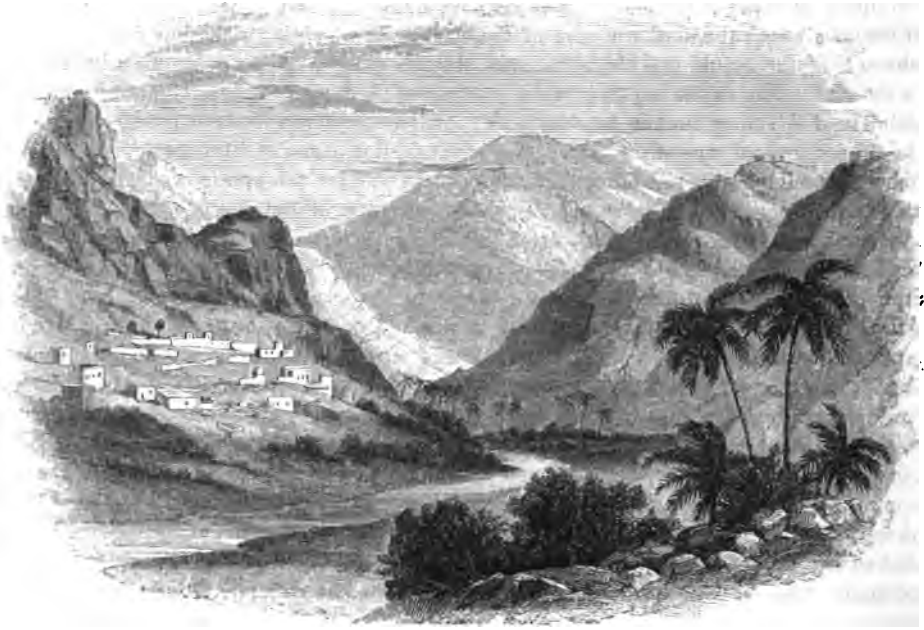
when the low country is parched with consuming droughts; and hence this region contrasts advantageously with the northern part of the peninsula, which is an absolute desert; and the inhabitants of the central and southern parts, from the comparisons they are thus led to make, regard their country as the happiest under heaven. The air also is here delightfully pure and cool. The fell simoom never reaches to this high region; and at the convent, at the foot of Horeb, the thermometer may be at  $75^{\circ}$ , while in the low country, and particularly near the sea-shore, it will be at from  $102^{\circ}$  to  $105^{\circ}$ , or even  $110^{\circ}$ . In winter the whole of the upper Sinai is deeply covered with snow, which chokes up many of the passes, and often renders the mountains of Moses and St. Catherine inaccessible. Upon the whole, the climate is so different from that of Egypt that fruits are nearly two months later in ripening there than at Cairo.

After this general statement, with respect to this upper region, we can the better attend to the particulars of the view which engages our attention from the summit of Mount St. Catherine, which stands nearly in the centre of it. The characteristics to the north of this central region have been already insufficiently indicated for our present purposes. We, therefore, turn at once to the east, and observe that the slope of the upper mountains is much less abrupt on this than on the opposite side. The mountains in this direction, beyond the high district of Sinai, run in a lower range towards one of the principal cross valleys, called Wady Sahl, beyond which, to the east and north-east, the chains intersect each other in many inferior masses of irregular height, till they reach the Gulf of Akaba, which was clearly discernible to Burckhardt from Mount St. Catherine, when the sun was just rising over the mountains of the Arabian side of the gulf. All the mountains bordering on the gulf are of secondary height, except in the short extent (in about the centre of the line) between Noweyba and Dahab, where they rise to considerable elevation. The country to the south-east, down nearly to the terminating headland of the peninsula, is also occupied by mountains of minor size, and the valleys are so narrow that few of them can be distinguished from our point of view; and the whole country in that direction appears an uninterrupted wilderness of barren mountains.

Southward, the view is bounded by the high mountain of Om Shomar, which forms a nucleus of itself, apparently unconnected with the upper Sinai, though bordering close upon it. To the right of this mountain the sea may be distinguished, in the neighbourhood of Tor, near which begins a chain of low, calcareous mountains, called Jebel Hemam [or Death], which is separated from the upper Sinai by a broad, gravelly plain, called El Kaa, across which the road from Tor to Suez passes. This plain terminates to the W.N.W. of Mount St. Catherine, and nearly in the direction of Mount Serbal. Toward this plain of El Kaa the central Sinai mountains are very abrupt, and have no secondary intermediate chain between them and the plain at their feet. The mountain of Serbal is separated from the upper plain by some valleys, especially Wady Hebran, and it forms with several neighbouring mountains a separate cluster terminating in peaks, the highest of which appears to be as high as Mount St. Catherine. It borders on the valley of Feiran [Faran, Paran], and being situated to the north-west of the great central cluster of mountains, it is necessarily the first high mountain at which travellers coming direct from the head of the gulf arrive.

This survey indicates a few objects which we must examine a little more particularly.

First, there is the southern mountain of Om Shomar, which we do not know that any traveller but Burckhardt has hitherto visited; and he did not mount the highest summit, which seemed to him impossible to reach, the sides being almost perpendicular, and the rock so smooth as to afford no hold for the feet. He halted 200 feet below the top, and there a beautiful view opened upon the Gulf of Suez, and the neighbourhood of Tor, which place was distinctly visible, while the wide plain of El Kaa lay extended at his feet. This mountain consists of granite, the lower part of which is red, while the top is almost white, so as to appear from a distance like chalk; this arises from the large proportion of white feldspath in it, and the smallness of the particles of hornblende and mica. In the middle of the mountain, between the granite rocks, are broad strata of brittle, black slate, mixed with layers of quartz and feldspath, and with micaceous schistus. The quartz includes thin strata of mica, of the



[Mount Serbal.]

most brilliant white colour, which is quite dazzling in the sun, and forms a striking contrast with the blackened surface of the white and red granite.

The mountain of Serbal seems to the author of this work of peculiar interest, from the considerations which in another place<sup>a</sup> led him to conjecture that this, and not the so-called Jebel Mousa, is the mount on which the law was delivered to Moses. The present merely descriptive account does not require us to re-state the arguments on which this conclusion was founded, or to add those further considerations which we may adduce in a subsequent page. It is sufficient now to remind or apprise the reader that this is the view which we have taken, and which we have more lately seen no occasion to modify.

The French commissioners seem to be the only persons who mention this mountain by name, prior to Burckhardt, and he is still the only traveller by whom it has been ascended. It illustrates the singleness of object of the old pilgrim travellers, that although they could not but see this remarkable mountain, none of them condescend to notice it in their books, as it was not pointed out to them as connected with any of the circumstances which made this region venerable to them. The only notice of it we have been able to find is in Morison, who mentions it as "une haute montagne," without naming it or giving any description. It has been treated with rather more respect since Burckhardt directed attention to it; but it is generally despatched in a few lines, in which its general aspect is stated; travellers who come land-wise from Suez being careful to reserve their descriptive resources for Mounts St. Catherine and Mousa; and those who, having come by water to Tor and returning by land, have already been at those mountains, find, by the time they get to Mount Serbal, that their resources of this kind are exhausted.

The mountain has in all five peaks, the two highest of which are those to the east, one of which Burckhardt ascended. These rise like cones, and are distinguishable from a great distance, particularly on the road from Suez. The ascent is very difficult; and Burckhardt was completely exhausted by the time he reached the lower summit, to climb to which took him not less than four hours. Here there is a small plain with some trees, and the ruins of a small reservoir for water. After reposing here for a while, our traveller ascended the eastern peak, and reached its top in three quarters of an hour, after great exertion; for the rock is so smooth

<sup>a</sup> 'Pictorial Bible;' note on Exod. xix. 2.

and slippery as well as steep, that, although barefooted, he was obliged frequently to crawl upon his belly to avoid being precipitated below; and had he not casually met with a few shrubs to grasp, he would probably have been obliged to abandon the attempt, or have rolled down the cliff. The summit of this eastern peak consists of one enormous mass of granite, the smoothness of which is broken by only a few partial fissures, presenting an appearance not unlike the ice-covered tops of the Alps. The sides of this peak, at a few paces below its top, are formed of large insulated blocks, thirty or forty feet long, which appear as if just suspended in the act of rushing down the steep. Near the top there are steps regularly formed with large loose stones, which must have been brought from below, and so judiciously are they arranged, that they have resisted the devastations of time, and may still be used for the ascent. Burckhardt was afterwards informed that these steps are the continuation of a regular path from the bottom of the mountain, which is in several parts cut through the rock with great labour. The eastern peak, which from below looks as sharp as a needle, has a platform on its summit of about fifty paces in circumference. On this is a heap of small loose stones about two feet high, forming a circle about twelve feet in diameter. Just below the top, every granite block that presents a smooth surface, offers inscriptions, the greater part of which are illegible. Similar inscriptions are found on the sides of the small caverns, large enough to hold a few persons, which exist between the masses of stone.

As the eye is very apt to be deceived in estimating the relative heights of mountains, Burckhardt hesitates to give any positive opinion as to that of Mount Serbal; but it seemed to him to be higher than all the peaks, including Jebel Mousa, and very little lower than Mount St. Catherine.

That this mountain is the "Mount Paran" of Scripture, which name the valley below it still bears; and that it is also the Sinai, from which the law was delivered, we entertain no manner of doubt; but as, at present, we can hope to carry only the readers of "the Pictorial Bible" with us in that conviction, we only allude to it in order to explain and justify the attention we have bestowed on this mountain.

So much has been said of the inscriptions found on the rocks and cliffs of Sinai, that we also may be expected to say something about them. It is remarkable that those near the summit of Mount Serbal are alone those which are found on the higher mountains, or which are engraved on granite, if we except those which are found in the valley at the foot of Mount St. Catherine, and which appear to have been the work of pilgrims visiting the rock in that place which is absurdly alleged to be that which was stricken by Moses. With these exceptions, the inscriptions are, in general, little more than scratches on the smooth cliffs, of sandstone and other comparatively soft rocks, of the hills and sides of the valleys in the lower region of Sinai. They consist of writing in characters which no one has been able to decipher, and of rude figures of animals. When the existence of such inscriptions was first made known to the European public, some sensation was excited by the notion that they were the work of the Israelites during their sojourn in this region. This notion has long been relinquished; and although no certainty has been attained, yet, as these inscriptions occur exclusively on the road to Mount Serbal, and from thence to the alleged stone which Moses struck in Rephidim, and from other considerations which we need not now state, it would seem that they were the work of pilgrims—probably in and prior to the sixth century—at a time when Mount Serbal was regarded, as we still believe it to be, as the true Sinai of the sacred writings. The animal figures, interspersed or detached, we are disposed to regard, with Burckhardt, as not traceable to the same source, but as being the work of the Bedouin shepherds of the peninsula: for while these figures are executed in a ruder manner and with a less steady hand than the inscriptions, they exclusively represent such animals as are natives of the peninsula,—as camels, mountain and other goats, and gazelles, but principally the two first; and it is an ascertained fact, that the present Bedouins of the peninsula are in the habit of carving the figures of goats, at least, upon rocks and in grottos. Speaking of the inscriptions which appear on the rocks lying near what always appears to have been a resting-place for pilgrims and travellers, Burckhardt observes, "they have evidently been done in great haste and very



rudely, sometimes with large letters and sometimes with small, and seldom in straight lines. The characters appear to be written from right to left, and although mere scratches, an instrument of metal must have been employed, for the rock, although of sandstone, is of considerable hardness. Some of the letters are not larger than half an inch; but they are generally about fifteen lines in height and four lines in breadth. The same character is seen at the beginning of almost every line, whence it appears that none of the inscriptions are of any length, but that they consist merely of short phrases, all similar to each other, in the beginning, at least. They are, perhaps, prayers, or the names of pilgrims, on their way to Mount Sinai, who had rested under this rock."

But the principal display of such inscriptions is found in the Wady Mokatteb or the Written Valley, which lies on the most frequented road to Serbal and Sinai, and where the cliffs are so situated as to afford a fine shelter to travellers during the mid-day hours, to which circumstances may, doubtless, be attributed the numerous inscriptions found in the valley. This valley extends for about three hours' march in the direction N.W.; in the upper part it is three miles across, having to the left (coming *from* Sinai) high mountains; and to the right, a chain of lower sandstone hills. Half way down it becomes narrower, and then takes the name of Seyh Szeder. In most places the sandstone rocks present abrupt cliffs, twenty or thirty feet high. Large masses have separated themselves from these cliffs, and lie at their feet in the valley. The cliffs and rocks are thickly covered with inscriptions, which are continued, with intervals of a few hundred paces only, for at least six miles; and similar inscriptions are found, in the lower part of the valley, where it narrows, upon the sandstone rocks of the opposite or north-eastern side of the valley. They are exactly of the same kind as those which have already been mentioned. Some of them are cut at the height of twelve or fifteen feet, which must have required a ladder to ascend to them. They are in general cut deeper than those in the granite of the upper country, but in the same careless style. Among these many are evidently Greek, containing, probably, like the others, the names of those who passed here in their pilgrimage to the holy mountain. Some of the latter contain Jewish names in Greek



[Wady Mokatteb ]

characters. There is a vast number of drawings of mountain goats and camels, the latter being sometimes represented as laden and with riders on their backs. Crosses are also seen, indicating that the inscribers were Christians.

We have seen that Burckhardt calls the stone of Wady Mokatteb, sandstone. Laborde describes it as a crumbly freestone; and M. de Rozière, viewing and figuring it as a mineralogist, more precisely indicates it as psammite—"the psammite of Mokatteb," and describes it as composed of small quartzose grains, rather unequal, feebly aggregated, and strewn with micaceous spangles. With this correction as to the nature of the stone, Laborde's account of the manner in which nature appears to have prepared these vast tablets to receive the writings which they bear, deserves attention. The effect of running waters, as well as of the humidity of the atmosphere, is to undermine the base of the crumbly rocks in which the bed of this valley is hollowed out. Having then no support, they fall away, leaving behind them a smooth and uniform surface. The rocks may be supposed to have been thus undermined at the base when one of those earthquakes, of which evident traces remain, disturbed them with sufficient violence to cause the whole of the covering so unsupported to fall to pieces. The walls of the valley then appeared such as they are at the present day,—uniform throughout their whole extent, and defended at bottom by the masses which had been detached from them. The pilgrims who passed found these immense tablets too inviting not to multiply upon them their names, their wishes, and the usual exclamations of travellers; and the rocks, not having then been hardened by the air, easily received the short inscriptions they wished them to bear.\*

\* The authorities which have been consulted for the preceding account of Siuai are, Morison, M. de Rozière (in Description de l'Égypte), Burckhardt, Henniker, Laborde, Stephens, Lord Lyndsay, &c.

#### SUPPLEMENTARY NOTES.

(<sup>1</sup>) HEIGHT OF LEBANON, p. xxxii.—The mountains of Lebanon being the highest in the whole chain of the Syrian mountains, and Jebel Esssheikh being the highest in Lebanon, it follows that it is also the highest of the entire range.

That Lebanon is the highest part of all Syria is proved by the course of its two principal rivers, the Orontes and the Jordan, which, arising at the opposite extremities of the range, are compelled, by the declivities, to shape their courses, the one to the extreme north, and the other to the extreme south, of Syria. The port of Larneca, in Cyprus, is distant thirty leagues; but the traveller scarcely leaves it before he discovers the higher summits of Lebanon capped with clouds. None of the mountains of Libanus or Anti-Libanus have been measured; but an approximating estimate may be formed from a comparison of facts furnished by Volney, Burckhardt, and Clarke. During winter, the mountains, throughout the whole extent from Scanderoon to northern Palestine, are covered with snow; and its disappearance or continuance on the advance of summer of course affords a test of comparative elevation with reference to the point of perpetual congelation, which, in this latitude,

may be taken at 11,000 feet. Now, in and after the month of March all this snow dissolves, except in the higher regions of Lebanon. The range of Anti-Libanus generally must not be included in this exception: for when Burckhardt reached the summit, so early as March 22, he observes that not only had the heavy rains, usual at the season, dissolved the greater part of the snow, but that he found there some stunted oaks; circumstances which evidently demonstrate that this must be considerably below the point of perpetual snow; and probably the estimate of 9000 feet, which we have seen, may be correct. Even on the higher summits of the Western Lebanon, where the snow continues later, it disappears as the season advances, unless in the highest cavities, and towards the north-east, where it is sheltered from the sea-winds, and the rays of the sun. "In such a situation," says Volney, "I saw it still remaining in 1784, at the very time that I was almost suffocated with heat in the valley of Baalbec." As, therefore, it is only under a combination of favourable accidents that snow remains all the year on the very highest points of Western Lebanon, it is not to be supposed that their elevation *exceeds*, even if it barely reaches, the

limit of 11,000 feet. The southern part of Anti-Libanus, which bears the distinct name of *Jebel Esssheikh* (Mount Hermon), is the only portion of the whole that appears to be unquestionably above that limit; but how much above it our information does not enable us to state. In one of the best maps of the Holy Land (Palmer's), the height is given as "12,000 or 15,000 feet." This loose way of stating heights will not do; but it results, apparently, from the above considerations, that the height of *Jebel Esssheikh* cannot well be less than 12,000 feet. Elliot says of this mountain that it is "considered the most elevated peak of Syria, and thought to rival Mount Blanc, though the high land on which it stands detracts considerably from its apparent altitude, and makes it a less imposing object than the king of European mountains, as seen from the Italian valley of Aosta." Dr. Clarke, observing this mountain in July from the plain of Esdraelon, says, "This summit was so lofty that the snow entirely covered the upper part of it, not lying in patches as, during summer, upon the tops of some very elevated mountains, but investing all the higher part with that perfect white and smooth velvet-like appearance which snow only exhibits when it is very deep." Elliot tells us that the mount takes its name of *Jebel Esssheikh*, or *Old Man's Mountain*, from the resemblance which the vivacious fancy of the Orientals have traced in the summit of the mountain topped with snow, which sometimes lies in lengthened streaks upon its sloping ridges, to the hoary head and beard of a venerable Sheikh.

(<sup>3</sup>) **THE MOUNT OF BEATITUDES**, p. xxxv.—The hill which bears this name is of too little geographical consequence to claim a place where the principal mountains alone are professed to be noticed. But its celebrity, as the hill on which the Sermon on the Mount is supposed to have been delivered, will not permit us to pass it altogether unobserved. It is about thirteen miles to the south of Safet, the road from which descends for two hours, and then crosses several of the other mountains of Upper Galilee before it arrives at the foot of this mountain. The Mount of Beatitudes, with two projecting summits on one of its extremities, bears some resemblance to the back of a camel, and is itself low, although the plain on which it stands is of considerable elevation, and commands a beautiful prospect. "In front," says Mr. Elliot, "there are several ranges of hills rising one above another; the mountains of Upper and Lower Galilee, and the city of Safet, elevated above all, like a sen-

tinel on a post of observation: on the left is Tabor; on the north-west is the long, high range of Lebanon; and on the right the sea of Tiberias, with the hills of Ituræa and Gaulonitis." And, with reference to Safet, as the city to which Christ is supposed to have directed attention from the Mount of Beatitudes, the same traveller observes, "Such is the height of Safet, that from every point where it is seen it cannot fail to form the most remarkable feature in the landscape; and if the position assigned to our Lord, when delivering his unparalleled discourse, be correct, Bethulia, the ancient Safet, rose in unrivalled majesty immediately before him."

(<sup>4</sup>) **CARMEL**, p. xxxviii.—"Padre Camillo (one of the monks of the convent on Mount Carmel) was unwilling to leave his cave, and, as the rain had again commenced, we remained there for an hour or two longer. 'What a place for uninterrupted contemplation!' cried he. 'Here, indeed,' spouting out a passage from his favourite historian, he continued, 'the plants, the rugged rocks, the moaning of the wind, the prospect of the ocean, the murmuring of the streams, the lowing of the herds, the friking of the flocks, the shady valley, the singing of the birds, the delightful clime, the variety of flowers, the odour of the aromatic herbs, how they refresh the soul!' This sounded very sweetly in Italian; and as he delivered it with all his heart, standing in the mouth of the cave as if he had been before an altar, from the very spot where so much was in reality assembled, too, it came with great force, for the catalogue is not overcharged." —*Skinner*, i. 103.

(<sup>4</sup>) **LEVELS IN SINAI AND PALESTINE**, p. xli.—Since the first portion of this chapter was printed, we have seen in the 'Athenæum' (No. 600) a report of the proceedings at a meeting of the Geographical Society, when an abstract was read of Mr. Russegger's journey from Sinai to Hebron and Jerusalem. The notice, though short, is exceedingly valuable, from the information which it gives on a subject which has been entirely overlooked by the mass of travellers. We therefore transcribe nearly the whole of it:—

"On his return from Egypt at the close of 1838, Mr. Russegger went to Suez, and from that point set out, in a south-east direction, to ascend Mount Sinai; and he gives a series of barometrical levels, from the shores of the Red Sea to the summit of Mount St. Catherine, which, by his measurements, rises 8168 French feet above the sea. From Mount Sinai he

crossed the desert of El Tyh, in a direct north line to Hebron, and obtained twenty-two levels on this route also: from Hebron he went to Bethlehem, and found its elevation to be 2528 feet; and thence to Jerusalem, which he states at 2479 French, or 2640 English feet.

“Mr. Russegger devoted much attention to the barometric measurements of the level of the Dead Sea; and, after other observations, on hanging up his barometer on the shores of that sea, he could no longer continue his obser-

vations, for the quicksilver *rose to the top of the tube*. He then calculates the following depressions:—village of Rihhah (supposed Jericho), in the valley of the Jordan, 774 feet; bathing-place of the pilgrims in the Jordan, 1269 feet; and the Dead Sea, at its northern end, 1319 French feet, or nearly 1400 English feet *below* the level of the Mediterranean!” We shall await with impatience the more extended information which Mr. Russegger must be prepared to give.



[Mount Carmel.]

## CHAPTER III.

### GEOLOGY AND MINERALOGY.



[Rock of Moses.]

OUR information concerning the geology and mineralogy of Palestine is remarkably imperfect and indistinct: for these were matters which the older travellers entirely overlooked; and the dispersed and incidental notices with which we have more lately been supplied are found to be very defective, when an attempt is made to combine their facts in one connected statement. Hasselquist, Shaw, Volney, De Rozière, Seetzen, Clarke, Burckhardt, Irby and Mangles, and Buckingham, furnish nearly all the information which can be obtained; and that is only such as will supply materials for the statement which we have now to offer. That it is a very imperfect one we know; but are persuaded that it comprises the substance of all existing information, and that nothing of any consequence has escaped our researches.

Some geological information has been given in the preceding chapter, particularly as regards the mountains of Seir and Sinai; and indeed all the information which we are now about to supply might have been incorporated with that chapter, had it not seemed more desirable to separate, when it could conveniently be managed, the descriptive from the scientific details. This chapter, therefore, must necessarily assume the form of a scientific appendix or sequel to the preceding; while we shall endeavour, as far as possible, to divest the statements we have to offer of that technical character which might perhaps exclude them from the attention of the general reader.

Limestone is the prevailing constituent of the mountains of all Syria,<sup>a</sup> as well as of Asia

<sup>a</sup> As some writers distinguish Palestine and Phœnicia from Syria, we take this opportunity of stating that, wherever we use the name "Syria," without clearly expressing or implying such a distinction, we use it as a proper and convenient general name for all that region extending from Asia Minor to the borders of Arabia and Egypt, of which Palestine and Phœnicia are but parts.

Minor and Greece. The general character of the stone of the mountains which compose the great central ridges of Syria, or which ramify from them, is that of a hard calcareous rock, sonorous when struck, and of a whitish or pale yellow colour. It is, in short, a very hard kind of limestone, disposed in strata variously inclined, and, like all limestone strata, affording a great number of caverns, to which frequent allusion is made in the Scriptures. Some of them are capable of containing 1500 men, and there is one, near Damascus, which will even afford shelter to 4000. In mountains of this construction it is not unusual for huge masses of rock to take the shape of ruins of towns and castles. This is remarkably observed in the road from Aleppo to Hamah, but scarcely in any part of Palestine.<sup>a</sup>

The prevailing character of the constituent rock undergoes, of course, various modifications of texture, colour, form and intermixture, in different parts of the country; and, commencing at the north, it may be useful to specify some of the appearances which, in different localities, it exhibits, and some of the more remarkable changes which it sustains. But it is to be regretted that the travellers who notice such particulars seldom mention the extent in which their statement is to be understood; so that it is seldom possible to distinguish whether the recorded appearance is strictly local or of extensive range.

In the far north—that is, in the hills which bound on the north the plain in which stood the ancient Hamath—the calcareous rock is noticed by Burckhardt as being “of considerable hardness, and of a reddish yellow colour.”

That the name “Lebanon” is formed from a word signifying *whiteness* is, we imagine, not because of the snow which, during part of the year, covers the summits, but on account of that whitish colour which has been described as one of the *general* characteristics of these mountains. This may be exemplified by the observation of Buckingham, who, in his ascent from the sea-shore (at Tripoli) to the cedars, rested on Jebel Ainneto, and there noted that the mountain on which he stood was wholly composed of white limestone of different qualities; and that the lower mountains over which he had passed, and which now lay under his view, seemed very much to resemble the white hills on the banks of the Jordan, as seen from the Mount of Olives, near Jerusalem. This comparison is valuable. At a point more elevated in the same quarter, but some miles more to the south, at the point where the name of Jebel Libnan *now* terminates, Burckhardt observes that the rocks are all in perfectly horizontal layers, some of which are thirty or forty yards, while others are only a few yards, in thickness.<sup>b</sup>

From carefully comparing the different authorities on the subject, it appears to us that the texture of the rock which lines the valley of the Jordan and its lakes is much less dense than that of Lebanon, or even of that in the central parts of Palestine. It appears also that, along this valley, the density of the rock diminishes as we proceed southward, at least as far as the Dead Sea. We know certainly that the texture of the rock is more loose and light along the valley of the Jordan than it is in Lebanon or in the heart of Palestine: we know also that the stone which lines the basin of the Dead Sea is of still less density than this; and, although we know not exactly whether the stone of Mount Seir, still more to the south, is more or less dense than that of the Dead Sea, we do know that it is a stone easily wrought, and that its texture is very loose.

Buckingham speaks of the rock at the ruins near Om Keis as of “coarse grey limestone,” and it probably extends throughout this district, as Burckhardt speaks of the uniform appearance of the calcareous stone in all the country between the rivers Mandhour and Zerka. In this neighbourhood—that is, off the south-east of the Lake of Gennesareth—there is a considerable display of that black basaltic rock which we shall hereafter have much occasion to notice. The river Mandhour, which passes to the north of the high plain of Om Keis, towards the Jordan, flows through a deep bed of it: the western declivities of the same plain are also basaltic; and eastward, in the way from Hebras to Om Keis, Burckhardt saw alternate layers of calcareous and basaltic rock, with thin layers of flint. None of this appears in the higher mountains southward to the Zerka, which are entirely calcareous; but the mountain imme-

<sup>a</sup> Clarke, iv. 202. Volney, i. 280.

<sup>b</sup> Burckhardt, 145, 25. Buckingham's 'Arab Tribes,' 468.

diately to the south of that river exhibits the calcareous stone with layers of various coloured sandstone, and large blocks of the black basaltic stone of the Haouran. Mr. Buckingham, who crossed the mountains of Gilead a few miles to the south of the same river, notes that the first range of hills, from the Jordan, was generally of white limestone, but the second had a mixture of various kinds of rock,—showing that the diversified appearance which is observed near the bank of the Zerka is prolonged to some distance southward.<sup>a</sup>

On the west, approaching the Dead Sea from Jerusalem, the hard light-coloured limestone of the hills near that city is exchanged for a limestone of looser texture, sometimes white and sometimes greyish, between which are layers of a reddish micaceous stone, or *Saxum purum micaceum*; the shore of the lake exhibits, in several places, perpendicular strata, formed of reddish brittle earth, which would doubtless in time become slate enclosed in limestone.<sup>b</sup>

Returning to the east, and ascending southward from the bed of the river Arnon,<sup>c</sup> we find, in the upper part of the calcareous mountains, the ground covered with large blocks of the black Haouran stone. Lower down, small pieces of mica and petrified shells are also found. Still more to the south, the mountains are all calcareous with flint, and abound in petrified shells. Here also are met with fine specimens of calcareous spath, which the Arabs honour with the name of Hadjar Ain el Shems, the Sun's eye.<sup>d</sup>

The mountains of Seir, or those which extend southward between the Dead Sea and the Ælanitic Gulf, need not engage our attention further in this place, as the separate notice which we have given to them embodies all the mineralogical information we have been able to obtain.

But the Sinai mountains must again engage our attention; and in turning to them we may again remind the reader that, while the inclusion of this Arabian region in our account, and the space we are allowing to it, is amply justified by the superior interest in Hebrew history, and the unquestionably superior geological interest, of this region to any which the proper limits of Palestine include, our information concerning it is far more ample and precise than we possess concerning any other region of south-western Asia. If, therefore, the confessedly disproportionate attention we afford to it gives occasion for question or remark, it may be sufficient to answer, that the disproportion arises less from any redundancy in the account of this region than from the aspect of meagre brevity which the want of adequate materials obliges us to give to the account of districts which would in themselves be entitled to an equal measure of attention.

Before proceeding to furnish the additional information contained in this chapter concerning the geological characteristics of Sinai, it gives us great pleasure to introduce some reflections of M. de Rozière, which he makes in the course of his observations on the engraved representations of mineralogical specimens which are given in the 'Description de l'Égypte,' and which offer very many examples of the Sinai rocks. "The rocks of Arabia, those of Horeb and Sinai, excite another sort of curiosity—a curiosity not arising from their employment in the arts, but from their association with the famous deeds of the sacred history and the sojourn of the Israelites. The Greek monks, who since the first ages of Christianity have constantly dwelt in this region, profess to have preserved the traditional knowledge of all the places and of every point which is mentioned in the history of the Jewish people; and it is this [alleged] power of identification which has excited towards this country the veneration of the Oriental Christians, and the fervour of pilgrimages. The traveller of every sect, of every communion, visits, even to this day, with a respectful admiration, the spots in which the might of God was once manifested by so many miracles. These monuments are doubtless viewed under differing impressions, by reason of the diversities of religious opinion; but they inspire in all men a certain interest, which makes them desire to possess or to retain a clear idea not only of their forms but of their nature." On such grounds he explains and vindicates the very particular attention he gives to this region, when his proper subject was Egypt; and on similar grounds, and with greater propriety, we, whose proper subject is Palestine, explain and justify the attention which we also give to the Sinai mountains.

<sup>a</sup> Burckhardt, 272, 273, 347. Buckingham's 'Palestine,' ii. 103.

<sup>c</sup> Now *Wady Modjeb*.

<sup>b</sup> Hasselquist, 126, 130.

<sup>d</sup> Burckhardt, 374, 394.

Having viewed the mountains of the extensive region which our inquiries embrace in what may be called the historical direction, from north to south, it may be well to reverse this order for a while; and this chiefly for the sake of the Sinai mountains, that we may see clearly, as at both ends, the connections of the general system in which Palestine is involved.

The *mechanical* connection of the Sinai mountains, as the culminating mass of the great Lebanon chain, is manifest; but, although the mechanical connection of these mountains with those of Egypt, on the opposite side of the gulf, is broken by the bed of the Red Sea, the physical connection—the connection of homogeneity—still remains most evident, and requires to be noticed here, though not prominently adduced.

It is, then, observed that all the mountains of the principal chain, from the south-west of the cataracts of the Nile to the north-east of the deserts of Sinai, are primitive. In the southernmost part they belong principally to the granitic formation; in the middle part to the schistose, and in the northern to the porphyritic. Between the two last we find numerous rocks pertaining to this very interesting formation, composed essentially of feldspath, in confused laminæ, and of a large quantity of amphibole (or hornblende), without quartz or mica. This is very improperly called *syenite* by the German geologists; for it is absolutely foreign to the mountains of Syene and the neighbourhood (which certainly belong to the granite formation), although it constitutes the principal mountains of Arabia Petræa, and particularly of Mount Sinai, and all the neighbouring summits. For this reason the French scientific commissioners thought it unadvisable to continue to apply to the stone of these mountains the name (*syenite*) which should properly belong to the granite of Syene, but chose rather to modify the name slightly, to bring it into conformity with that of its proper country, calling it *Sinaïte*, and which is in all cases to be understood as the specific name of the principal constituent of the mountains, which travellers unacquainted with terms of more precise distinction describe under the general name of granite.

M. de Rozière draws a line which divides the primitive from the secondary formation. It commences in the mountains to the west of Elephantine, and is afterwards found, more to the north, on the other side of the Nile, increasing its distance from that river as it proceeds northward. It traverses, in a very oblique direction, the Troglodytic deserts, and is subsequently met with following the same course in Arabia Petræa. It cuts the axis of the Sinai peninsula at about three short days' journey to the north of Mount Sinai, beyond the valley of Feiran; and appears to be prolonged, in the same direction, to join the mountains of Syria. On this last point M. de Rozière was doubtful; but his conjectural statement has since been confirmed by the actual observations of Laborde, which demonstrate—as shown in the account which we gave in the preceding chapter—that the primitive formation extends into the mountains of Seir.

All the mountains to the south of this line are of primitive formation; while all to the north of it, to the Mediterranean, are of secondary formation, and principally calcareous, with the exception of a band, of varying breadth, composed of mountains of sandstone and pudding-stone, which are almost always found interposed between the primitive and secondary formations. There are, indeed, long ridges of quartzose pudding-stone in the midst of the calcareous region,<sup>a</sup> and calcareous mountains are found upon the borders of the Red Sea, in the southernmost of the divisions to which this statement applies; but these and other exceptions do not interfere with the accuracy of the general definition.<sup>b</sup>

We have been accustomed to conclude, on the authority of Irby and Mangles, that the first traces, however faint, of ignigenous rocks were to be met with on the southern borders of the

<sup>a</sup> Speaking of this phenomenon in another place, M. de Rozière remarks that it is difficult to render a reason for the existence of mountains of pudding-stone in the midst of a region entirely calcareous. The causes which have produced these masses of siliceous matter are, doubtless, the results of those grand and later catastrophes which have left multiplied traces over all the globe, and the existence of which is recognised at every step by those naturalists who have observed these sorts of grounds. As to the causes, the manner in which they operated, and the means by which these incongruous masses were brought to the situations in which they are found, we have little but a large number of doubtful conjectures. We know only that these rocks are posterior to those by which they are surrounded, and that calcareous beds, now destroyed, have furnished, at least, a part of the siliceous matter of which they are composed.

<sup>b</sup> 'Description de l'Égypte,' xx. 319-21.



Dead Sea, although they are not found elsewhere till we approach the Gulf of Akaba. These valuable travellers, in their unpublished book, tell us that towards the southern extremity of the lake, the low plain between its edge and the foot of the eastern mountains presents innumerable fragments of red and grey granite; grey, red, and black porphyry; serpentine, a beautiful black basalt, breccia, and other kinds of stone *from the neighbouring mountains*. On the other hand, Mr. Russegger, in a recent communication to the Geographical Society,<sup>a</sup> expressly declares that he sought in vain, around the basin of the Dead Sea, for any trace of volcanic or plutonic rocks, porphyry, granite, trachyte, &c., or, indeed, any rock at all resembling them. But, as it does not appear that he visited the *southern* extremity of the lake, to which alone the statement of Irby and Mangles refers, we consider that it leaves their testimony unimpeached, while it serves to show that the appearances which they noticed do not extend to the northern borders of the lake.

We have already seen that the higher or central region of Sinai is entirely composed of ignigenous or plutonic rock, granite, or, more precisely, sinaïte, forming the principal constituent of the higher mountains.

The prevailing characteristic of this rock has already been explained to consist in its being almost entirely composed of amphibole and feldspath; and the object of the present chapter does not require us to enter into the detail of minute variations. Those who seek such information as we withhold, may find it abundantly in the letter-press explanations of the mineralogical plates (xi. to xv.) of the 'Description de l'Égypte.' It may, however, be proper to introduce a few particulars, which seem to us the most remarkable or important.

In one of the mountains which enclose a small oasis in the interior of the Sinai peninsula, between the valley of Feiran and the desert of Nasb, the sinaïte is superposed on beds of melaphyre.<sup>b</sup> Of this last-named species of primitive rock, there are extensive banks at about three hours' march to the north of Mount Sinai.

In another part of the mountains about this desert (which seems the seat of many noticeable details) the banks of porphyry and sinaïte are surmounted by beds of ancient transition limestone. The most remarkable of these is of a fine lilac colour, very compact, of great hardness, and a crystalline texture. It contains cavities, generally round or elliptical, holding a white powder, which appears to proceed from the decomposition of small shells, though on this point our author does not feel assured. Among the primitive mountains which border on this same desert of Nasb, we also sometimes observe thick and perfectly horizontal beds of a beautiful violet sinaïte, found reposing on banks of porphyry. We have already, in the preceding chapter, mentioned the immense block which forms the summit of Mount St. Catherine. It is composed of one of the varieties of sinaïte, and is distinguished by clear colour and neat crystallization from the porphyritic and sinaïtic rocks which compose the principal mass. The monks who dwell at the foot of the mountain are thoroughly persuaded that the tables of the law which God delivered to Moses were composed of this rock. In the sinaïte of the neighbouring summit—that of Mount Sinai—the crystallization of the feldspath is more confused, the crystals of amphibole are smaller, and those of quartz are more numerous, but also smaller than in the other: mica, of which there are some traces in most of the varieties, is wanting in both of these.<sup>c</sup>

Burckhardt informs us (though without strict correctness in the comparison) that the granite of this peninsula presents the same numberless varieties as that above the cataract of the Nile and near Assouan; and the same beautiful specimens of red, rose-coloured, and almost purple may be collected here as in that part of Egypt. The transition from primitive to secondary rocks, partaking of the nature of what he calls *grünstein* or *grauwacke*, or hornstein and trap, presents also an endless variety in every part of the peninsula. Masses of black trap, much resembling basalt, compose several insulated peaks and rocks. On the

<sup>a</sup> Reported in the 'Athenæum,' April 27, 1839.

<sup>b</sup> This is a black small-grained diabase, much charged with amphibole. It is strewn with crystals of grey feldspath of different sizes, and containing small irregular masses of pyrites.

<sup>c</sup> 'Description de l'Égypte,' xxi. 307—309, 311.

shore, the granite sand, carried down from the higher mountains, has been formed into cement by the action of the water, and, mixed with fragments of the other rocks, already mentioned, has become a very beautiful breccia.<sup>a</sup>

The remarkably polished surface which the *sinaite* in this peninsula frequently offers has been attributed to the action of minute particles of quartz sand moved over it by the winds during a long succession of ages. The alleged cause is certainly in operation, and is known to be adequate to produce the observed effect.

It is remarkable that the enormous granitic masses which stand isolated in the valleys of the upper Sinai have been observed to be not of the same kind with any of the beds in the neighbouring mountains, from which they might be supposed to have been detached. They are composed almost entirely of feldspath in very distinct red crystals, intermixed with large crystals of quartz, with the slightest possible indications of micaceous laminæ. One of the most remarkable of these detached masses is the rock said to have been that struck by Moses in Rephidim. [See head of Chapter.] The mica joined, in a small quantity, to feldspath and to quartz, gives to this rock a place among the true granites.<sup>b</sup> Its very abundant feldspath is of a pale rose colour. Other particulars respecting the rock itself are reserved for another page.

In the region of Sinai, the granite appears with its customary companions, under various circumstances of association. Greenstone is frequent. The traveller from the mountain of Moses to the Gulf of Akaba, advances to its shore through a valley hemmed in by a chain of high and perpendicular greenstone rocks, and finds that this stone and the granite reach all the way down to the sandy beach. Towards the opposite extremities of the Ælanitic Gulf, and, in both instances, at nearly the same height above the sea level, the greenstone is found with red porphyry and granite. Porphyry is conspicuous in other parts of this interesting region. At Tabakat very beautiful porphyry is seen with large slabs of feldspath, traversed by layers of white and rose-coloured quartz. Mountains entirely composed of porphyritic diabase are met with about a day's journey to the north of Mount Sinai. The crystals of feldspath, which appear so prominent in the prevailing porphyry, are very rare or altogether wanting in this. The prevailing colour of this mass is a greyish green, which sometimes passes into a dark green. Pyrites are disseminated in it, sometimes in considerable masses.

Epidote forms part of many of the rocks of Arabia Petræa, and is sometimes united with a feldspath white with slight streaks of red. These two substances are frequently associated in the country to the south of Mount Sinai, and principally in the environs of Ras Mohammed, which forms the point of the peninsula.

The remarks of Burckhardt upon the construction and succession of the lower ranges of primitive mountains form a very instinctive sequel to the preceding statement. His observations refer, first, to the mountains which enclose Wady Sal, but admit of a more extended application. "On the top I found the rock to be granite: somewhat lower down, greenstone and porphyry began to appear: further on, granite and porphyry cease entirely; and the rock consists solely of greenstone, which, in many places, takes the nature of slate. Some of the layers of porphyry are very striking. They run perpendicularly from the very summit of the mountain to the base, in a band of about twelve feet in width, and projecting somewhat from the other rocks on the mountain's side. I had observed similar strata in Wady Genne, but running horizontally along the whole chain of mountains, and dividing it, as it were, into two equal parts. The porphyry I have met with in Sinai is usually a red indurated argillaceous substance: in some specimens it had the appearance of red feldspath. In the argill are imbedded small crystals of hornblende or of mica, and thin pieces of quartz at most two lines square. I never saw any large fragments of quartz in it. Its universal colour is red. The lower mountains of Sinai are much more regularly shaped than the upper ones: they are less rugged, and have no insulated peaks, and their summits fall off in smooth curves."

One of the specimens of rock from Sinai, which make the most beautiful appearance in the

<sup>a</sup> Burckhardt, 521, 572.

<sup>b</sup> 'Description de l'Égypte,' xxi. 312.

plates of the 'Description de l'Égypte,' is named, by M. de Rozière, talcose quartz; and we are told that it forms very extensive beds towards the middle of the route which leads from Mount Sinai to the extremity of the peninsula. This quartz offers some slight lamellar appearances, and there are several varieties of it. Sometimes feldspath is associated with the quartz. The rocks in which the quartz most predominates divide themselves into cuneiform fragments, the greenish surfaces of which, clouded with red and yellow, are ornamented with beautiful, dark, and thickly-tufted dendrites. We do not know that we have met with any notice of simple quartz, as comprehended within the range which our inquiry embraces, except in Hasselquist, who tells us that all the stones on the shore, at the north-western extremity of the Dead Sea, were quartz of different colours and sizes, of which those pieces nearest the water's edge were encrusted with an impure salt.<sup>a</sup>

The presence or absence of mica has frequently been mentioned in describing the composition of the granites of Sinai; but, excepting the thin strata of brilliantly white mica which occurs in the quartz layers of Om Shomar, as mentioned in the account of that mountain which is given in the preceding chapter, we find no notice of it, otherwise than in such composition, within the whole range of our inquiry, saving that Burckhardt found small pieces of it at the foot of the calcareous mountains on the south of the river Arnon.<sup>b</sup>

Gneiss is found abundantly in every part of the Sinai peninsula;<sup>c</sup> but we do not find its presence indicated by travellers in any other part of the region over which our inquiry extends.

Sandstone, which sometimes occurs with the common calcareous stone, which is the more general constituent of the mountains, as well as with the black stone of the Haouran, is very frequently met with, particularly in the eastern country, and more especially in the south. Burckhardt observes that the whole coast of Syria, from Tripoli to Beirout, appears to be formed of sand, accumulated by the prevailing westerly winds and hardened into rocks. If it were not indispensable to adhere to ascertained facts, it might be presumed that the same cause produced the same effect in, at least, some portions of the coast to the south of Tripoli. Sandstone also abounds on the shores and among the lower mountains of the Sinai peninsula. To the north-east of the higher mountains the calcareous and sand rocks succeed simultaneously to granite of the grey, small-grained species, in a valley, the bottom of which is covered with deep sand. Farther on (E.N.E.), travellers pursue their way between sandstone rocks, which present their smooth, perpendicular sides to the road. Some of them are red, others of a white colour; the ground being still deeply covered with sand. In these rocks, the traces of torrents are observable as high as three or four feet above the present level of the plain. In a barren valley, more eastward, sandstone is seen again to alternate with granite; and another valley (Wady Boszeyra), farther on, is wholly enclosed by grey granitic rocks, which the Arabs hew for mill-stones. Sandstone, red and white, forms some of the cliffs on the Sinai shore of the Gulf of Akaba.<sup>d</sup> In like manner, sandstone succeeds to granite on the road leading from the upper mountains of Sinai to the Gulf of Suez, on the way to the town of that name. At the place where the granite finishes and the sandstone begins, rock salt is found among the latter. Speaking generally, we may say that a sandstone region succeeds to the primitive region of the Sinai peninsula, and separates it from the calcareous region of the north and north-east. Its ridges are of no great elevation; and where it lines the great valley (of Mokatteb), on the road to Egypt, and other transversal valleys of the peninsula, it presents long escarpments, covered with a prodigious number of those inscriptions, in different languages and characters, which engaged our attention at the end of the preceding chapter. Sandstone continues to be very common northward from Sinai, till we reach the Wady el Ahsa, near the southern extremity of the Dead Sea. The rock of that valley is chiefly composed of this stone; but to the north of that point it is met with very rarely.<sup>e</sup> One of those rare instances of its occurrence in the mountains south of the Zerka,

<sup>a</sup> Burckhardt, 498, 526, 537, 493; 'Description de l'Égypte,' xxi. 303, 316, 314; Hasselquist, 284.

<sup>b</sup> Burckhardt, 375.

<sup>c</sup> Burckhardt, 487.

<sup>d</sup> Burckhardt, 178, 494—497, 501, 619.

<sup>e</sup> Burckhardt, 178, 401, 494—497, 501, 619, 620; 'Description de l'Égypte,' xxi. 307.

in connection with calcareous rock and the black basaltic stone of the Haouran, has already been noticed; and in connection with the latter it is also found so far north as Jebel Heish, to the east of the lake Houle.<sup>a</sup>

In the present chapter we have, in general, enumerated the subjects which have engaged our notice in that order which the natural conditions and associations of the region examined seemed to render most expedient, without paying minute regard to, or altogether overlooking, the principles of a scientific arrangement. Thus we first noticed limestone, as the principal characteristic of Syria, and then proceeded to the primitive or igneous rocks of Sinai, these being the two principal subjects of attention; and we have just noticed the sandstone, because it is in the third degree important, as supplying the connecting link between the limestone of Syria and the granites of Sinai. In a stricter arrangement, the black and apparently igneous rock, which figures more or less conspicuously along the whole eastern margin of the region passing under our review, should have engaged our earlier notice; but, being so irregularly connected with the local system, it seemed better to reserve it for this place, at the head, as it were, of the somewhat miscellaneous notices which will occupy the remainder of this chapter. This stone occurs so far north as El Bara, forty miles south by west from Aleppo, and extends, as we have seen, to the peninsula of Sinai. It is the principal constituent of the hilly and rocky districts eastward in the Haouran; and, in the country nearer the Jordan, through the defined extent, it occurs in masses, generally detached. Burckhardt calls this stone by various names, as tufwacke, basalt, black trap, and black stone of the Haouran. Seetzen uniformly calls it "basalt." On which Burckhardt observes, that he rather conceives this black and heavy stone to belong to the species called tufwacke by the Germans. He adds that this stone gave occasion to the ancient opinion that there were mountains of iron on the east side of the Jordan; and even now the Arabs believe that these stones consist chiefly of iron; and travellers are often asked if they know any process by which it may be extracted. It is to be regretted that in his various geological notices he does not adhere to one denomination for this stone; so that it is not always easy to distinguish his intimations. On the upper part of the calcareous mountains which border the river Modjeb (Arnon) on the south, large blocks of it are found, of a more porous texture than in most other places. The mountain which borders, on the south, the river Zerka (Jabbok), is composed of calcareous stone, with layers of various coloured sandstone and large blocks of this same black stone. The more northern river of Mandhour is described as flowing through a bed of tufwacke; but whether the black Haouran stone is intended, we cannot distinguish. This stone is sometimes exhibited in alternate layers with other strata. Thus at Szalkhat, in the Haouran, Burckhardt notes, "the hill upon which the castle stands consists of alternate layers of the common black tufwacke of the country, and of a very porous, deep red, and often rose-coloured pumice-stone. In some caverns formed of the latter, saltpetre collects in great quantities."<sup>b</sup>

In the district west of the lake of Gennesareth—or on the route from Nazareth to Tooran, and, more particularly, between Cana and the latter place—"basaltic phenomena" were noticed by Dr. Clarke. The extremities of columns, prismatically formed, penetrate the surface of the soil, and render the journey rough and unpleasant. The learned traveller adds, "These marks of regular or of irregular crystallization generally denote the vicinity of a bed of water lying beneath their level. . . . Nothing is more frequent in the vicinity of very ancient lakes, in the bed of considerable rivers, or by the borders of the ocean. Such an appearance, therefore, in the approach to the Lake of Tiberias, is only a parallel to similar phenomena exhibited by rocks near the Lakes of Locarno and Bolsenna in Italy; by those of the Wenner lake in Sweden; by the bed of the Rhine, near Cologne, in Germany; by the valley of Ronca, in the territory of Verona; by the Giant's Causeway of the Pont du Brindon in Venice; and by numerous other examples in the same country; not to enumerate instances which occur over all the islands between the north coast of Ireland and Iceland, as well as in Spain, Portugal, Arabia, and India."<sup>c</sup>

<sup>a</sup> Burckhardt, 314.<sup>b</sup> Burckhardt, 34, 375, 347, 273, 103; Seetzen, *passim*.<sup>c</sup> Travels, vol. iv. pp. 191—193.

On the other side of the river, at a point to the south-east of the lake, where the high eastern plain terminates at the valley of the Jordan, the cliffs are entirely basaltic. Ranges of black basaltic cliffs appear also on the western coast of the Ælanitic Gulf, in some of which the sea has worked creeks appearing like so many little lakes, with very narrow openings towards the sea, and full of fish and shells.<sup>a</sup>

We have scarcely found any notices of the presence of slate, excepting about the Dead Sea. Hasselquist mentions that slate is seen in the bordering mountains, and declares it to be asphaltic changed into slate; by which description we suppose it is to be regarded as bituminous shale. He also notes that there are perpendicular layers of a lamellated brown clay in the common clay of the banks, and asks, "Is this imperfect slate?" If so, as seems likely enough, there are two formations of slate going on in this neighbourhood—one from asphaltic and the other from clay. The same traveller also observes that he saw "schistus,—slate resembling flint, scattered here and there on the banks."<sup>b</sup> Some slight appearances of mica slate, in the primitive region of Sinai, have already been indicated.

In many places along the coast of Syria, including Palestine, the hard calcareous stone is surmounted by rocks of a soft, chalky substance, which includes a great variety of corals, shells, and other marine exuviae. Upon the Kesrouan mountains, above Beirout, there is another curious bed, likewise of whitish stone, but of the slate kind, every flake of which enfolds a great number and variety of fishes. These, for the most part, lie exceedingly flat and compressed, like the fossil fern-plants; yet, at the same time, they are so well preserved, that the smallest fibres and lineaments of their fins, scales, and other specific distinctions, are easily distinguished. Among these are specimens of the *squilla*, which, although one of the tenderest of the crustaceous family, has not sustained the least injury from pressure or friction. Dr. Shaw, to whom we owe this information, adds, that the greater part of the mountains of Carmel, and those in the neighbourhood of Jerusalem and Bethlehem, offer the like chalky strata. In the chalky beds which surround, in some parts, the summit of Carmel, are found



[Lapides Judaici.]

a great many hollow stones, lined in the inside with a variety of sparry matter, which, from some distant resemblance, are supposed by the natives to be petrified olives, melons, peaches, and other fruit. These are commonly bestowed upon pilgrims, not only as curiosities, but as antidotes against several distempers. Those which bear some likeness to the olive have been honoured with the title of *lapides judaici*, and superstitiously regarded as a sovereign remedy against the stone and gravel, when dissolved in the juice of lemons. These supposed petrified fruits are, however, as the Doctor states, only so many different sizes of round, hollow, flint-stones, beautified within by a variety of sparry and stalagmitical knobs, which are made to pass for as many seeds and kernels.<sup>c</sup>

That very marked and conspicuous feature of the coast, the White Cape,<sup>d</sup> below Tyre, derives its name from the whiteness which it owes to the chalky character we have described. Flints are, as usual, found embedded in the chalk.<sup>e</sup>

Inland, there are manifestations of chalk as far north as the sources of the Jordan. Thus the mountain of Bostra is of chalk, over the surface of which pieces of feldspath of various colours are strewed. But, southward from this, we find little more of it till we come to about the parallel of the northern extremity of the Dead Sea, almost twenty miles from which, east-

<sup>a</sup> Burckhardt, 273, 507.

<sup>b</sup> Hasselquist, 284.

<sup>c</sup> Shaw, ii. 135—155.

<sup>d</sup> The Album Promontorium of the ancients, now called Ras el Abaid; both names of the same signification.

<sup>e</sup> Buckingham's 'Palestine,' i. 92.

ward, large indications of chalky strata appear. It there forms the soil of the plain, and, proceeding southward, the soil is alternately chalky and flinty. In much of the early part of its course the river Arnon has worn its bed through the chalky rock. Beyond this the mountain over which the traveller from the north must pass before he reaches Kerek, is entirely composed of chalk and flint. These cretaceous indications occur occasionally in the further progress southward, and abound in, and on the approach to, the peninsula of Sinai. In one place Burckhardt speaks of the "lower chalk mountains all around the peninsula," as distinguished from the high primitive mountains of the interior, in such a manner as to intimate their frequency in the lower country and on the borders of the coast. The eastern coast of that peninsula, on the Gulf of Akaba, consists of a succession of bays, separated from one another by projecting headlands or promontories. Some of these headlands are of chalk. Burckhardt mentions one (Abou Burko) which he was an hour in doubling, as he travelled along the beach, and which was entirely a chalky rock, whose base was washed by the sea. This traveller first arrived at the sea-side, about eighteen miles to the south of this point, and there he observes that the grüstein and granite rocks reach all the way down to the sandy beach; but, at the very foot of the mountain, a thin layer of chalk appears just above the ground. On approaching this part of the coast from the interior, he had to pass through a valley of deep sand covered with blocks of chalk rock. Similar indications are afforded on the opposite side of this peninsula, towards the Gulf of Suez, as well as in the level soil of the desert which occupies its northern part. Thus the hills which enclose the barren valley of Wady Amara,\* consist of chalk and silex in irregular strata—the silex sometimes quite black, at other times taking a lustre and transparency much resembling agate. In the northward desert, the present name of which (El Tyh) commemorates the "wanderings" of the children of Israel therein, low hills of chalk occur, as well as frequent tracts of chalky soil, for the most part overspread with flints.

Indeed, flints abound in nearly all the plains and valleys through which the Hebrew host marched during the forty years which passed away, from the time that they departed from the land of Egypt until they encamped in the plains of Moab, before crossing the river Jordan. The preceding notice of the chalky districts also serves to indicate the localities of flint; for here, of course, as elsewhere, chalk and flint occur in constant connection. The flinty nodules are, however, not confined to the chalky tracts, but appear also in sandy plains and valleys. The presence of siliceous strata in the chalk hills of Sinai has just been noticed.

We have, on more than one occasion, mentioned the chains of hills which bound, on the east and west, the great valley that extends from the Dead Sea to the Gulf of Akaba. The western hills were crossed by Burckhardt at a point about thirty-five miles from the head of the gulf, where he observes,—the chain "is intersected by numerous broad wadys, in which the tall-tree grows: the rock is entirely siliceous, of the same species as that of the desert which extends from hence to Suez. I saw some large pieces of flint perfectly oval, three to four feet in length, and about a foot and a half in breadth." Passing these hills, the western desert presents to the traveller's view its immense expanse of dreary country, covered with black flints, with here and there some hilly chains rising from the plain.<sup>b</sup> It is a remarkable circumstance that the presence of loose flints in this very desert is noticed, incidentally, in the Scriptural account of the journey of Moses from the land of Midian to Egypt.

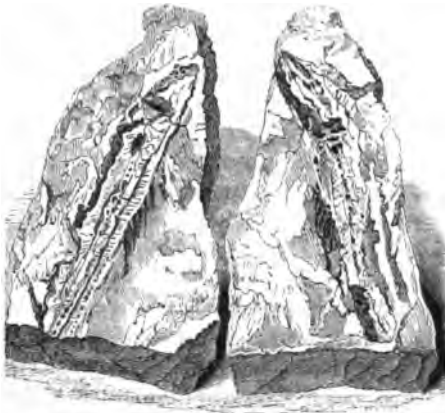
"Coal" is a word which sometimes occurs in our translation of the Bible; but it must always be understood to denote charcoal, as distinguished from raw wood for fuel. The ancients, including the Hebrews, if they knew the combustible properties of mineral coal, never appear to have thought of using it for fuel; nor do the Orientals use it to this day. Indications of coal are exhibited in various parts of the Lebanon mountains. Here and there a narrow seam of this mineral protrudes through the superincumbent strata to the surface; and we learn from Mr. Elliot that the enterprise of Mohammed Ali has not suffered even this source of national wealth to escape his notice. At Cornale, eight hours east from Beirut,

\* Probably the *Mara* of the Hebrew pilgrimage.

<sup>b</sup> Buckingham's 'Arab Tribes,' 98; Burckhardt, 47, 502, 498, 495, 472, 449, 450, 444, 445.

and 2500 feet above the level of the sea, where the coal-seams are three feet in thickness, Mr. Brettel, an English engineer, is employed, under his orders, in excavating the coal, which is of a good quality, and mixed with iron pyrites in large quantities. It is now transported to the sea-coast on mules; but to obviate the expenses of this mode of carriage it is said to be in contemplation to make a railroad to convey it to Beirout, and there to establish a dépôt.<sup>a</sup>

The lately preceding notice of the cretaceous formations of this country have given occasion for the mention of various petrifications which they contained. We now proceed to register such facts, relating to petrifications, as have not thus been anticipated. The whole subject has been much neglected by travellers, or attended to so slightly, that even those who do make some reference to it, rarely state to what species the organized remains belong. We have little to add respecting the petrified matters found on the Mediterranean coast. Volney, indeed, mentions a quarry of schisteous stone in the Kesraoun, at a little distance from the sea, between Batroun and Jebail—the flakes of which bear the impression of plants, fishes, shells, and especially the sea-onion. They seem, as we have already intimated, to be most abundant about the seaward bases of the Kesraoun and Lebanon mountains, and particularly in places to the north of Beirout. At the base of that range of Lebanon mountains to the north-east of



[Petrified Fish, embedded.]

Tripoli, which bears the name of *Jebel Turbul*, and near the fountain of *Bedoowee*, are found numerous stones, white and soft, but compact and moderately heavy; and when these are opened they exhibit the impressions, and even the skeletons, of different sorts of fishes. D'Arvieux opened several pieces, and in some he found most perfect and delicate skeletons of fishes, exhibiting the head, the body, the tail, the fins, entire in the finest parts; and the whole easily separable from the substance in which they were entombed; while the rest, without the least trace of the bones, offered impressions of the same parts as clear and perfect as if graven with the burin.<sup>b</sup> Mr. Elliot, also, procured from the village of *Hakil*, four miles to the north-east of *Jebaile*, and from *Boobda*

two hours south-east of Beirout, some beautiful spars and fossil shell-fish, with a box full of fish embedded in lime, like those found at *Lyme Regis*, on the coast of *Dorsetshire*.<sup>c</sup> Volney says that he never saw, or heard it said, that there were petrified shells in the higher regions of Lebanon: nor do we find any notice of such; unless it be that *Burckhardt*, in ascending to the higher summits, found a small petrified shell, and discovered a similar petrification on breaking a stone, which he picked up on the very summit, before descending to the cedars.

We are also informed by Volney that the bed of the torrent at *Ascalon* is lined with a heavy stone, porous and salt, which contains a great number of small volutes and bivalves of the Mediterranean. *Pococke* found a large quantity of them in the rocks which border on the *Dead Sea*. The quantity of shells in various states around this lake, but not near its waters, seems indeed to be very remarkable. Not to mention the myriads of small unpetrified shells which are strewn over the plain at its northern extremity, it may be observed that the calcareous mountains which are near *Kerek*, to the east from the southern extremity of the *Asphaltic lake*, abound in petrified shells; and some of the rocks consist entirely of small shells. Such shells are also found in great numbers in the ascent, southward, from the deep valley of the river *Arnon* (now *Modjeb*) to the high plains.

In the far southward prolongation of the same line, that is, on the *Sinai shore* of the *Ælanitic Gulf*, shells are found in precisely similar combinations. The largest plain on this

<sup>a</sup> Elliot, ii. 257.

<sup>b</sup> 'Memoires du Chev. d'Arvieux,' tome ii. p. 393.

<sup>c</sup> Volney, ii. 280; D'Arvieux, ii. 393; Elliot, ii. 256.

coast is that between Sherm and Nakk, towards the extremity of the peninsula. The whole of this plain appears to be alluvial; and many petrified shells are found embedded in the chalky and calcareous soil. Alluvial deposits, in a state more fresh and recent, are found in an opposite quarter of the peninsula, that is, in the desert somewhat to the north by east of the present head of the Gulf of Suez. Here Burckhardt notes, "The plain was covered with a saline crust, and we crossed a tract of ground about five minutes in breadth, covered with such a quantity of small white shells that it appeared at a distance like a strip of salt. Shells of the same species are found on the shores of the lake of Tiberias. Once, probably, the sea covered the whole of this ground." We notice this here, as every geological or other indication of alteration at the head of the Gulf of Suez, is of high importance in regard to the passage of the Hebrew host through its waters.<sup>a</sup>

There are many traces of fossil shells on the eastern borders of the Red Sea; and they are nearly all such as still exist in the sea itself. Several hours' journey to the south of Suez, there are extensive beds composed principally of the large shell known to naturalists by the name of *cama cigas*. The beds in which it is found are elevated several feet above the edge of the sea, embedded in a fine calcareous gravel, the particles of which had acquired a certain degree of adhesion. On the same coast, in the route from the bay of Gharandel to the thermal fountains of Faroun, and at the height of 150 feet above the water-mark, quantities of two species of echinite are found reposing on a bed of compact limestone, with which, however, they are not in adhesion. It would seem that they were formerly retained in some friable bed which has been destroyed,—the usual cause of the isolation of echinites.

The promontory which detaches itself from the point of the peninsula to form the port of Ras Mohammed, where sometimes the vessels anchor which come from Mocha and Yemen, is a rock formed of petrified madreporas; some parts of which have, however, still preserved their natural state. Even in the parts which are completely petrified, it is often easy to distinguish the tissue of the madreporas of which they are formed, although their cells are filled with calcareous infiltrations.

In the deserts bordering on the Isthmus of Suez, and particularly in those parts where the hills are of friable strata, the soil is principally of a quartzose gravel, produced by their detrition. In this gravelly soil, which envelops the foot of the mountain, are found many fragments, and even entire trunks, of petrified trees, of upwards of ten or twelve feet in length. It is readily perceived that these trees belong to different species; but the palm-tree and the *seyal*, or desert acacia, alone can be identified; all the others offering, in their petrified state, characteristics too equivocal to allow their species to be determined. The perfect preservation and the size of the petrified trunks, thus found enveloped in the sands, not embedded in or forming part of any rocks, as well as various other circumstances enumerated by M. de Rozière, appear very clearly to intimate that they were not brought from any distance, but that they pre-existed and were entire on the arrival of the petrifying influence in the place where they grew. That these trees were produced in the desert posterior to the formation of mountains of pudding-stone, is not in itself very likely; for in these countries, where vegetation is so rare, it is only in deep valleys, or in places which are rendered, by the disposition of the surrounding soil, the receptacles of water, that we now find any living trees; and no doubt it has been the same in all ages. With respect to the acacia, it should be observed that it still grows in the deserts adjoining and forming the isthmus of Suez, where petrified specimens of its wood very frequently occur. Among the other petrified specimens, some appear to be those of the aloe and sycamore; but on this point, and from the causes we have stated, no certainty is realised.<sup>b</sup>

Palestine is abundantly supplied with salt from the shores of the Dead Sea and of the Mediterranean. Remembering that Moses describes the borders of the Dead Sea as a land of "salt and burning," attention is naturally turned to that quarter in the first instance. The intense saltness of the water of that lake has been supposed to proceed from strata or masses of rock-salt within its basin. This conjecture, as far as regards the bottom of the lake, cannot of course be verified. But there are indications on the shore by which it is favoured. Captains

<sup>a</sup> Volney, ii. 280; Elliot, ii. 479; Burckhardt, 394, 530, 464.

<sup>b</sup> 'Description de l'Égypte,' xxi. 298, 317, 318, 277, 193.



Irby and Mangles found several large fragments of rock-salt on the plain southward of the lake; and being led by this to examine the hill to the right of the ravine by which they had descended to the shore, they found it to be composed partly of salt, and partly of hardened sand. The salt was seen in many places to be hanging from the cliffs in clear perpendicular points, resembling icicles. Strata of salt of considerable thickness were observed, mixed with very little sand, and generally in perpendicular lines. There were also appearances which seemed to indicate that, during the rainy season, the torrents bring down immense masses of the mineral. Altogether, that which the travellers here witnessed seemed, to their minds, to divest of improbability the account of Strabo, who states that, to the south of the Dead Sea, there were towns and villages built entirely of salt.

Strata of rock-salt are also found southward, in the desert of El Tyh, and, still more to the south, even in the valleys of Sinai. In several parts of the road through the former the traveller observes holes out of which rock-salt has been dug; and in the cliffs which bound some of the latter, rock-salt is seen among the sandstone. In this last neighbourhood it is also obtained by excavation. It is white, and perfectly clean: "They showed us some," says Lord Lyndsay, "fit for the table of an emperor."<sup>a</sup>

Salt is abundantly deposited by the waters of the Dead Sea. The water encroaches more or less upon the shore according to the season, and dries off into small shallows and small pools, which in the end deposit a salt as fine and as well bleached as that of regular salt-pans. A solid saline surface, sometimes several inches thick, is often thus formed. As much of this salt as the market requires, is collected and taken away on the backs of asses. Irby and Mangles saw several persons thus employed. The briny waters of this lake leave a saline crust on whatever they receive or cover; the drift wood is so impregnated with salt that it cannot be made to burn; the loose stones on the shore become covered, as in the salt-pans, with a calcareous and gypseous incrustation; and the crumbly clay of the shore is also deeply impregnated with salt.<sup>b</sup>

Sea-salt may of course be obtained, by the proper measures, on the Mediterranean coast; and it appears that this source of supply was not in ancient times neglected. The rocks in several places along the shore were hollowed into a great number of troughs, two or three yards long, and of a proportionate breadth; intended originally for as many salt-pans, where, by continually throwing in the sea-water to evaporate, a large quantity of salt would be gradually concreted. In most cases now, however, the rocks, notwithstanding their hardness, have in the course of ages been so worn down by the waves, that the bottoms of the pits are scarcely below the general level. Salt is also spontaneously deposited in proper situations. Some of the people with Rauwolff collected near Zib (Achzib) as much as filled a large sack, while others were employed in catching fish and seeking oysters. As the salt-pans mentioned were exclusively found on the coasts of Phœnicia and Syria, and not on those of the proper Jewish territory, we may perhaps collect that the Hebrews were sufficiently supplied with salt from the Dead Sea.<sup>c</sup> (')

Saltpetre is produced abundantly in the eastern country of the Haouran, particularly in and about the Ledja. It is found in the caverns of those rocks of "black tufwacke" which have been so often mentioned in the notices of this part of the country. All the houses of the Haouran—the greater part of which are of ancient date—are built with this stone; and in the earth dug up among their ruins saltpetre is abundantly found. The saline earth from which it is extracted is also found in the open plains, to the productive spots in which the people are guided by the appearance of the ground in the morning before sunrise. Wherever the surface then appears the most wet with dew, the soil is found to be impregnated with the salt.<sup>d</sup> It will be recollected that captains Irby and Mangles also found lumps of nitre on the south-east shore of the Dead Sea.

The existence of natron, or carbonate of soda, is not confined to the deserts on the west of Egypt. On the eastern border of the Red Sea some traces of it may be found in the tepid waters of the Fountains of Moses, and in the hot waters of Hammam Faroun, and some

<sup>a</sup> Burckhardt, 450, 619; Lord Lyndsay, i. 315.

<sup>c</sup> Shaw, ii. 153; Rauwolff, 262.

<sup>b</sup> Irby and Mangles, ii.; Hasselquist, 284; Seetzen, 41.

<sup>d</sup> Burckhardt, 9, 102, 114, 214.

efflorescences of natron may be found at Tor, and in the vicinity of Sherm : but we do not find it accumulated in any considerable quantities ; but only such traces of it as these, in places where the calcareous soil has been impregnated with marine salt. The interior of the deserts, in the northern part of Sinai, towards Egypt on the one hand, and towards Palestine on the other, offers here and there, after rains, slight efflorescences of natron intermixed with marine salt.

In declaring to the Israelites the benefits and rich endowments of that Promised Land of which they were about to take possession, their great leader informed them that it was " a land whose stones were iron, and out of whose hills they might dig copper." <sup>a</sup> And that such proved to be the case may be inferred from the frequent mention of these metals in the history of the Jews, and the abundance in which they appear to have been possessed. But in the later condition of the country, in which, for ages, the treasures hid in the earth have not been sought after, but little information concerning its metals can be expected.

Volney assumed the existence of iron in Judea, and knew that it abounded in Lebanon. It is indeed, he says, the only metal which is found abundantly in those mountains. The mountains of Kesraoun and of the Druses are full of it ; and, every summer, some mines, which were simply ochreous, continued, in his time, to be worked by the inhabitants. Burckhardt also mentions the iron of Shouair in the Kesrouan, and adds the curious fact that, as the place of the mines affords no fuel, the iron ore is carried, on the backs of mules and asses, one day's journey and a half to the smelting furnaces at Nabae el Mouradj, where the mountains abound in oak. There is no doubt that iron-works were anciently carried on in this quarter very much in the same fashion, as large quantities of scoria are occasionally discovered at a distance from the mines, and generally near forests of evergreen oak, the wood of which was probably used for smelting. This is, probably, more from ignorance of the presence or use of coal, than from any preference of wood, although it is now well known that the ore prepared with wood is superior to that subjected to coal fires, because the metal becomes partially carbonated, and is therefore with less difficulty converted into steel, a purer carbonate of iron ; and that it is from this use of wood rather than coal which renders the Swedish iron so much more valuable than any other. However, the recent discovery of coal in Lebanon may be expected to operate importantly on the production of iron in Lebanon, if Syria remains under its present government ; and our latest information (Elliot's) acquaints us that the discovery was about to be turned to account by the erection of a furnace for smelting the ore.

Mr. Buckingham, crossing Lebanon from Tripoli to Baalbec, went over a mountain called Jebel Ainneto, which is composed of white limestone of different qualities, and exhibits, in parts, streaks or layers of red, as if coloured by the oxide of iron, or some other metal. In the valley below this mountain he observed several masses of a deep brown purplish rock, and was informed that this was the stone from which iron was procured, and that there was a mine still worked a few hours' journey to the south.<sup>b</sup>

We do not know that any travellers have noticed the presence of iron in Palestine west of the Jordan ; but so few travellers have been in the habit of attending to such matters, that their silence concerning this or any other mineralogical product, scarcely supplies even a negative argument against its existence.

Josephus mentions a mountain called the Iron Mountain, on the other side Jordan ; and, from his indication of locality, it appears to have been one of those bounding the valley of the Jordan on that side, somewhere not greatly to the north of the Dead Sea. In a corresponding situation Mr. Buckingham probably found this mountain and the cause of the name it bore. Crossing the Jordan about nine miles above the Dead Sea, and then journeying in a north-east direction, the first range of hills was found to be generally of white limestone ; but the second had a mixture of many other kinds of rock ; among these was a dark red stone, which broke easily, and had shining metallic particles in it, like those of iron ore.<sup>c</sup>

<sup>a</sup> Deut. viii. 9.

<sup>b</sup> Volney, i. 281 ; Burckhardt, 27 ; Buckingham's ' Arab Tribes,' 468-9 ; Elliot, ii. 258.

<sup>c</sup> ' Travels in Palestine,' 322.

Iron is catalogued among the metals wrought, long before the Deluge, by Tubal-Cain; and this just suffices to show that it was known very early. But in practical use, copper is known to have been employed much earlier, and long to have been in more general use, even for purposes (such as arms, tools, and instruments) to which no one thinks of applying it now. The priority of use is claimed also by gold and silver,—metals which, with copper, are, as Robertson observes, “found in their perfect state in the clefts of rocks, in the sides of mountains, or the channels of rivers. They were accordingly first known, and first applied to use. But iron, the most serviceable of all, and to which man is most indebted, is never discovered in its perfect form; its gross and stubborn ore must feel twice the force of fire, and go through two laborious processes, before it becomes fit for use. Man was long acquainted with the other metals before he acquired the art of fabricating iron, or attained such ingenuity as to perfect an invention to which he is indebted for those instruments wherewith he subdues the earth and commands its inhabitants.”<sup>a</sup>

An inquiry into the state of the metallurgic arts among the Hebrews belongs to another place. It may suffice here to observe that besides the slight intimation respecting Tubal-Cain, which we have already mentioned, there is no mention of iron in the Pentateuch until after the departure of the Israelites from Egypt; but Job, whose history evidently belongs to patriarchal times, speaks of iron on more than one occasion, alluding to it as “dug out of the earth,” and as proverbial for its strength. The Egyptians were celebrated for their skill in extracting various metallic ores from the mines between the Nile and the Red Sea, and for the fabrication of metals: and there is evidence that the Hebrews picked up a fair degree of knowledge of the latter branch of the art, while among that people; but it appears to us that it was long after they became a nation before they sought for metals in their own soil or were able to extract them when found. They seem long to have obtained from Egypt, on the one hand, or from Phœnicia on the other, such articles of metal as they required ready made, or the metal for making them in a state fit for use. It is remarkable that iron is not once mentioned among the materials employed in the construction of the tabernacle, or of the many utensils belonging to it for which that metal may seem to have been very suitable. And although David laid up “iron in abundance” for the service of the temple to be built by his son, the account of the actual construction does not inform us how the metal was employed. When the Israelites defeated the Midianites, iron occurs among the spoil obtained by the conquerors, and is, with the more precious metals, directed to be purified (from its ceremonial uncleanness) by being passed through the fire. Upon the whole, it seems doubtful that the Hebrews ever worked the mines of their own country to any important extent, if at all; and although iron may, in later times, have been plentifully in use among them as compared with other metals, such plenty would be scarcity, and is so even now in Western Asia, compared with the abundance in which this metal is possessed by ourselves.

Of copper we can find no information. Volney,<sup>b</sup> indeed, heard a vague report that there was anciently a copper-mine near Aleppo, but which must long since have been abandoned. This, besides, was far beyond the limits of Palestine. The ancient application of this metal to all purposes for which iron is now employed has been noticed in the preceding paragraphs; and this went so far, that even tools for cutting stone were made with this metal hardened by an alloy of tin.<sup>c</sup> But the ancient uses of copper is a subject which has largely engaged our attention elsewhere;<sup>d</sup> and what we may further have to say respecting it does not belong to this place. We shall, therefore, only remark, that although Moses expressly tells of the existence of copper (not “brass,” which is a factitious metal) in the Holy Land, the metal appears to have been principally obtained from the Egyptians and Phœnicians, both of whom had it abundantly—the former from mines and the latter by traffic. The Jews were certainly not a people to take the trouble of seeking in the bowels of the earth for that which they could obtain, easily and cheaply, in exchange for the produce of their fields and flocks. The Phœnicians were particularly noted for their manufactures in this metal, as appears even from

<sup>a</sup> ‘America,’ book iv. 125.

<sup>b</sup> ‘Travels,’ i. 281.

<sup>c</sup> Wilkinson, i. 241.

<sup>d</sup> ‘Pictorial Bible,’ note to Exod. xxxi. 4.

the Bible; and Ezekiel intimates that, at least, a portion of their supply was brought from the neighbourhood of the Black Sea.

As we have mentioned the use of tin in alloying copper, we may properly add that although tin is not found in the Holy Land, the use of it was known to the Hebrews very early; for we find it mentioned among the spoils which they won from the Midianites before they entered the Land of Promise. From what source it came at this early date, unless from India, it is not easy to discover; but ultimately our own islands furnished the chief supply to the Phœnicians. The prophets more than once allude to its use in alloying more precious metals.

Lead is also mentioned on the occasion to which we have just adverted; but it had previously been mentioned by the patriarch Job as a substance on which writings were graven. And if he lived in the land of Edom, he was not very far from one of the sources from which this metal might be supplied; for lead is said to exist at a place called Sheff, near Mount Sinai. Another source of supply is indicated in the recent discovery, by Mr. Burton, of ancient lead-mines, in some of which the ore has been exhausted by working, in the mountains between the Red Sea and the Nile.<sup>a</sup> We have not found any notice of this metal within the proper limits of Palestine.

No traveller in Palestine makes any mention of gold, except Dr. Clarke. At the lake of Tiberias he takes occasion to observe,—“Native gold was found here formerly. We noticed an appearance of the kind, but, on account of its trivial nature, neglected to pay proper attention to it, notwithstanding the hints given by more than one writer upon the subject.”<sup>b</sup> We believe, however, that, for every practical purpose, it may be said that Palestine has no gold. It is always spoken of by the Jewish writers as a foreign product. As gold was very common, relatively, in Egypt, where extensive mines of it were worked at a very early date, much of that in the hands of the Hebrews was probably obtained from thence. In fact, the first gold of which we read, historically, was obtained from the Egyptians. But the supplies obtainable from this source became, ultimately, inadequate to the demand; and Solomon and some of his successors obtained larger quantities from southernmost Arabia, the east of Africa, and the coasts of other countries bordering the Indian Ocean and Red Sea.

The Scriptures do not mention that Palestine afforded any silver; yet some traces of that metal appear to have been found. When Volney was among the Druses, it was mentioned to him that an ore affording silver and lead had been discovered on the declivity of a hill in Lebanon; but as such a discovery would have ruined the whole district by attracting the attention of the Turks, much haste was made to destroy all appearance of its existence.<sup>c</sup> It is observable that of the four principal metals—gold, silver, iron, and copper—silver is by much the latest which is mentioned. It is not noticed in Genesis during the period before the Deluge; and, after that event, it does not occur in the account of Abraham’s visit to Egypt, nor until the same patriarch’s purchase of a burial-ground for his family, for which he paid in silver. Thus, although so comparatively late to be noticed, it must then long have been known and in use, it having already become a medium of exchange and a standard by which value was estimated. Whence the Jews got their principal supplies of silver is not very clear, unless from the Phœnicians. This metal might be obtained in some quantities, one would think, from the lead mines of Egypt, if there were no proper mines of silver; and the Hebrews appear to have been in possession of a great deal of it when they were in the desert after leaving that country. Yet it is thought that silver was scarce in that country—Belzoni says, scarcer than gold—and the rarity of the colour of silver in the paintings of utensils and ornaments, and of the actual metal in the numerous articles which have been found, affords much sanction to this conclusion.

The neighbourhood of Hasbeya, near the sources of the Jordan, is noted for its mines of asphaltum. Burckhard was told by a priest that in this same neighbourhood a metal was found, of which no one knew the name or made any use. Accordingly, on digging about,

<sup>a</sup> ‘Egyptian Antiquities,’ ii. 327; ‘Library of Entertaining Knowledge.’

<sup>b</sup> Travels, iv. 224; he cites Hagesippus de Excid. Urb. Hiero. lib. iii. c. 26, &c.

<sup>c</sup> Volney, i. 281.

the traveller found several small pieces of a metallic substance, which he took to be a native amalgam of mercury. According to the description given him, cinnabar is also found there; but, after digging for an hour, no specimens of it were found.<sup>a</sup>

It is not in the nature of things that we should have any information concerning precious stones found in Palestine. The treasures of the earth are not now in that unhappy country sought after by any; so much otherwise, indeed, that any trace of their existence, which is incidentally brought to the notice of the inhabitants, is studiously obliterated or concealed. If any of the more precious stones are found, it must often happen that they are not heeded, or their value recognised, in the natural state, by the finder. And, from their general proceeding in such matters, we know that any one who might find a precious jewel, the value of which he knew, would be most careful to conceal the fortune which had befallen him, lest its disclosure should bring utter ruin upon himself and his house. In this state of things no one will expect to obtain information concerning precious stones found in Palestine. Almost every kind of precious stone is mentioned in the Scriptures, although there is no passage which intimates that they were of native produce. But from the mineralogical character of the country, it would not be unreasonable to expect that it should afford such stones as the topaz, the emerald, the crysoberyl, rock crystals, and some of the finer jaspers. Pliny mentions a species of amethyst which was found southward in Paran, whence it took the name of Paranites.<sup>b</sup>

<sup>a</sup> Syria, 33.

<sup>b</sup> Nat. Hist., lib. xxxvii. c. 9.

#### SUPPLEMENTARY NOTE.

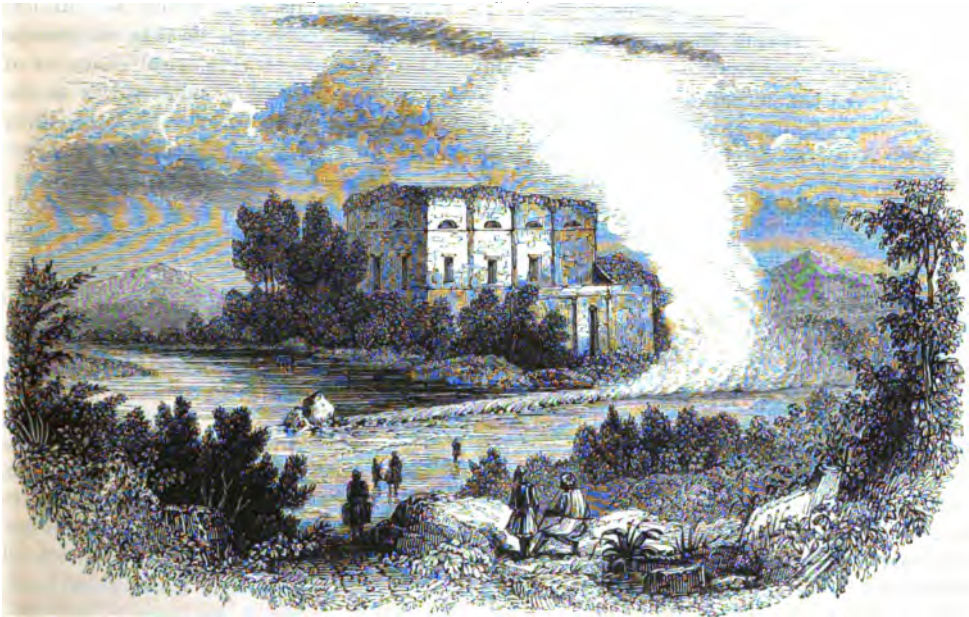
(<sup>1</sup>) SALTPETRE IN OLD HOUSES, p. lxx.— In one of the notes of the 'Pictorial Bible,' (Lev. xiv. 34) it has been supposed that the "house-leprosy," concerning which various minute regulations were made by Moses, consisted in a deposit of saltpetre upon the walls. It may, perhaps, be taken as an interesting corroboration of this view, that the houses beyond Jordan, where the law on this subject was delivered, were, from the character of the soil on which they stood, or from the nature of the stone with which they were built, particularly liable to this visitation. Assuming the explanation in the 'Pictorial Bible' to be correct, it seems most interesting, at this distance of time, to find in the actual state of the habitations of this region, a satisfactory and unexpected reason for so peculiar a set of minute regulations.

Saltpetre for use is collected as well from the old houses as from the other sources indicated in the text. Burckhardt's account is this:—"The earth in which the saltpetre

is found is collected in great quantities in the ruined houses, and thrown into large wooden vessels perforated with small holes on one side near the bottom. Water is then poured in, which drains through the holes into a lower vessel, from whence it is taken and poured into large copper kettles: after boiling in these for twenty-four hours it is left in the open air, when the sides of the vessels become covered with crystals, which are afterwards washed to free them from all impurities." It appears that, by this process, 100 pounds of the saline earth yield one and a half of saltpetre. The production is so abundant, that one person engaged in the manufactures informed Burckhardt that he alone, on his own account, sent 100 cwt. of saltpetre to Damascus every year. From this and the other sources of supply in the same districts, all Syria is furnished with the article. At no greater distance than the lake of Tiberias, our traveller saw it sold at double the price for which it might be obtained on the spot.

## CHAPTER IV.

### VOLCANIC INDICATIONS AND EARTHQUAKES.



[Hot-Springs and Ruined Bath near the Hieromax.]

IN the country which we are now describing, the traces of volcanic action are abundant ; but are nearly confined to the basin and enclosing hills of the Jordan and its lakes. “The bituminous and sulphureous sources of the Lake Asphaltites,” says Volney, “the lava, the pumice-stones thrown upon its banks, and the hot-baths of Tiberias, demonstrate that the valley has been subject to volcanic eruptions, and the seat of a subterraneous fire which is not yet extinguished. Clouds of smoke are often observed to issue from the lake, and new crevices to be formed upon its shore.” The same writer elsewhere says that the Lake of Tiberias, as viewed from Mount Tabor, looks as if enclosed in the crater of a volcano, and other travellers allow the fitness of this comparison. (1)

The hot-springs thus alluded to, as affording evidence of still existing means which it pleased God in former times to employ in producing effects which are still very apparent, are found on the western shore of the Lake of Tiberias, to the north of the town which bears the same name. The most important of them rises at the base of a mountain about a quarter of a mile from the town, and a pistol-shot distant from the margin of the lake. Hasselquist describes the stream as equal in diameter to a man’s arm, where it issues from the mountain. “The water is so hot,” he continues, “that the hand may be put into it without scalding, but it cannot be kept there long ; consequently it is not boiling hot, but the next degree to it. It has a strong sulphureous smell. It tastes bitter, and somewhat like common salt. The

sediment deposited by the water is black, as thick as paste, smells strong as sulphur, and is covered with two skins or cuticles, of which that beneath is of a fine dark green colour, and the uppermost of a light rusty colour; at the mouth, where the water formed little cascades over the stones, the first-mentioned cuticle alone was found, and so much resembled a *conferva*, that one might easily have taken this, which really belongs to the mineral kingdom, for a vegetable production; but nearer the river, where the water stood still, one might see both skins, the yellow uppermost, and under it the green." According to Robinson, the water runs from the bath in a strong sulphureous stream into the lake, leaving a yellow incrustation upon the stones over which it passes.

The spring which we have described is not the only one of the kind in this neighbourhood. There are several others, all rising near to the edge of the lake, and all equally hot, finely transparent, and slightly sulphureous, resembling extremely the spring already described. All these are in the same neighbourhood, which from them takes the name of El Hamam, the generic name for baths, corresponding, in sound and signification, to that of Emmaus, which it anciently bore.

Mr. Buckingham discovered three other tepid baths, considerably to the north of these, that is, about a league distant from Tiberias. He here found three ancient cisterns, open, circular, eighty paces in circumference, and from twelve to fifteen feet deep. They are about a hundred yards from each other, ranging along the beach of the lake, and each being supplied by an aqueduct from its own separate spring. The water in all of them was beautifully transparent, of a slightly sulphureous taste, and of a light green colour, as at the bath near Om Keis; but the heat of the streams at this place was scarcely greater than that of the atmosphere, as the thermometer in the air stood at 84°, and only rose to 86° when immersed in the water.

Continuing to journey northward, along the edge of the lake, Mr. Buckingham found, at a place which he calls Tahhbahh (probably the Ain Tabegha of Burckhardt), at the distance of nine miles from Tiberias, and three from the baths just mentioned, several other hot springs, resembling those at Om Keis, but still more copious.\* Around them are remains of four large baths, each supplied by its separate spring, and each having an aqueduct for carrying its superfluous waters into the lake, from which they are distant about three hundred yards.

The hot-springs at Om Keis, to which comparative allusions have here been made, belong also to the basin of the Lake of Tiberias, in an opposite quarter to those already described, being about three miles east by south from its southern extremity, and on the northern bank of the river Jarmuth,<sup>a</sup> Om Keis being opposite to it, to the south of the same river. The springs at this spot, and the other indications which it offers, may be considered as completing a chain of volcanic exhibitions around the lake of Tiberias. Crossing the river at this place, Mr. Buckingham found a black soil with some little cultivation; and a few yards up from the stream, on the north-western side, came to the ruins of a Roman building enveloped in the steam of the springs on which it stood. On approaching nearer, this edifice was found to be an extensive and complete ancient bath in tolerable preservation. He proceeds:—"The springs which rose here presented to us a deep and capacious basin of beautifully transparent water, of the colour of those precious stones called aqua-marines, and more purely crystal-like than any fountain I had ever beheld. It rose in bubbles from the bottom; but though deeper than the height of a man, a pin might have been distinguished at the bottom, or the inscription of a medal read, so unusually clear was the whole mass. The odour emitted in its steam was highly sulphurous, but its taste was considerably less so. Its heat at the fountain-head was such as to render it painful to the hand, if immersed beyond a few seconds; but a fact, for which we could not account, was, that at a few yards distant from its source it was sensibly hotter. From the fine transparent green of its central and deepest parts, the shade grew lighter as it approached the edges; and around the immediate rim of its natural basin, as well as on a little cataract formed by fallen masses of the ruined bath, the water had deposited a coating of the purest white, which gave an additional beauty to the appearance of

\* Jarmuth, Hieromax, and Sheirat el Mandhour are the Jewish, classical, and modern names of the same river.

the whole. The quantity of the water and the force of its stream were sufficient to turn the largest mill; and it made a sensible addition to the waters of the Hieromax, where it joined that river only a few yards below.”<sup>a</sup>

It appears from this traveller’s further account, that by gradual immersion the heat of the water can be borne. Though the Roman edifice is a ruin, and no modern convenience supplies its place, the healing virtues of the spring are held in high reputation among the Arabs; and those who have sought benefit from its waters rarely depart without leaving in front of the southern wall some humble votive offering, in the shape of hair, nails, teeth, and old rags of every kind and colour. The day following, the same traveller crossed the river at a lower point, and observed here that the dark masses of rock, over which it wound its course, resembled a stream of cooled lava, when contrasted with the lighter soil by which it was edged on both sides. The stones of its bed here were equally porous with those seen above; the ground also showed patches of sulphur in many places, and “we were of opinion,” continues Mr. Buckingham, “that the hot springs we had visited yesterday, the lakes of Cæsarea and Tiberias, the stone already described, the sulphureous and infertile nature of the plain of Jericho in many parts, and the whole phenomena observed of the Dead Sea, were sufficient indications of a volcanic effect, perhaps on the whole range of the long valley, from near the sources of the Jordan to beyond the point of its issue in the great asphaltic lake.”<sup>b</sup>

In a district the volcanic character of which is indicated by such hot-springs as those which we have described, we may expect similar manifestations in the mountains among or near which they occur. Such are accordingly afforded. Speaking of the mountain at whose base the only hot spring which he knew—that nearest to Tiberias—rises, Hasselquist says that it consists of “a black and brittle sulphureous stone, which is only to be found in large masses in the neighbourhood of Tiberias; but occurs in loose stones also on the coasts of the Dead Sea, as well as here at the Lake Gennesareth.” Elsewhere he says that the same stone of which the Tiberian mountains consist begins in the plain of Esdraelon. This stone is doubtless the same which Buckingham mentions in describing the hot springs near Om Keis, and that in such a manner as, in connection with Burckhardt’s intimations, abundantly proves that it exists around the lake, and in the eastern country, far more extensively than Hasselquist could know. After mentioning the ruins of the Roman bath at the Hieromax, Mr. Buckingham notices that “the whole of the edifice was constructed of the black stone of which we had lately seen so much, and which appeared to us to be volcanic; and we could now perceive that the cliffs above, through which the Hieromax makes its way, as well as on the upper part of the opposite hills, this stone formed a deep layer on a basis of white stone, almost like chalk. The whole bed of the river was one singular mixture of these black rocks, worn smooth and round by the passage of the water, but still as porous as pumice-stone, and equal masses of the white stone, which was nearly as hard, but of smoother surface.” He subsequently tells us that he met with the same “black porous stone” in the plain approaching Tiberias from Nazareth, thus unintentionally enabling us to identify it with that which is the subject of Hasselquist’s observation.<sup>c</sup>

The porous stone so much mentioned in the preceding statement is distinctly called *lava* by Maddox, as it is also by Mr. Calman, in his account of the earthquake of 1837; and the testimony of the latter, while it is entitled to particular respect, as that of an eminently pious man and a missionary, evinces more clearly than any other single statement, the volcanic character of this region. It was here that the earthquake just mentioned exhibited its utmost violence; and Mr. Calman, in his account of that awful visitation, is led thus to describe the natural characteristics which the country previously exhibited:—

“It may not be uninteresting to give some description of the appearance of the country which has suffered most, namely, about Gish, Safet, Tabereah, and Lubia. All these neighbourhoods abound with lava. With the exception of Safet, the buildings in all are composed of

<sup>a</sup> ‘Travels in Palestine,’ ii. 238—301, 334, 346.

<sup>b</sup> ‘Travels in Palestine,’ ii. 307.

<sup>c</sup> Hasselquist, 234, 157; Buckingham’s ‘Palestine,’ ii. 298, 323.



that material. Two places bear every mark of extinguished volcanoes. One is situated in the elevated plain half-way between Gish and Safet. At this season of the year its appearance is that of a small lake, being about a mile in diameter, perfectly circular, and filled with water, having round its edges an accumulation of lava to the height of many feet. The plain is covered with the same stones; they gradually diminish as one approaches Safet, and are no longer seen from that neighbourhood till near the lake of Tiberias, two hours to the south of the former place. Here again the mountains, which evidently once formed the boundary of the lake, are covered with lava, or rather in some cases composed of it. There is indeed a fertile plain, from one to two hours in width, intervening between these mountains and the lake; but this is evidently alluvial, and the lava accordingly makes its appearance in the bed of the lake itself."

Pursuing our way southward, along the course of the Jordan, we do not meet with any marked volcanic indications till we arrive in the neighbourhood of the Dead Sea. The eastern border of that lake, towards its northern extremity, offers the only other hot-springs which we shall be required to notice. We are quite sensible that we should have no right to regard hot springs in themselves as volcanic indications. But their character as such is indisputable when they exist in close association with other and less disputable volcanic exhibitions. Such exhibitions may be found, in the country under our view, without the presence of hot-springs; but the springs are nowhere to be found apart from such other indications. We have therefore given to them their proper place.

The springs to which we have just alluded occur in the ravine through which flows the rivulet of Zerka Mayn. Their direct distance east from the Dead Sea may be about three miles; but by the course of the ravine at least a mile more. We are indebted for the first modern account of these springs to the unpublished 'Travels' of Captains Irby and Mangles, who, hearing of them on their journey from Kerek to Szalt, made an excursion to view them. On looking down the valley into which these springs flow, it was found to present some grand and romantic features. The rocks vary between red, grey, and *black*, and have a bold and imposing appearance. The whole bottom is filled and, in a manner, choked with a crowded thicket of canes and aspines of different species, intermixed with the palm, which is also seen rising in tufts in the recesses of the mountain sides, and in every place whence the springs issue. In one place a considerable stream of hot water is seen precipitating itself from a high and perpendicular shelf of rock, which is strongly tinted with the brilliant yellow of sulphur deposited upon it. On reaching the bottom of the valley, the travellers found themselves in what might be termed the bed of a hot river, so copious and rapid was it, and its heat so little abated. This heat of the stream continues as it passes downward, from its receiving constant supplies of water of the same elevated temperature. In order to visit these sources in succession, they passed over to the right (northern) bank, and, ascending the mountain side, passed four abundant sources, all within the distance of half a mile, and discharging themselves into the stream at right angles with its course. The travellers had no thermometer, but the degree of heat in the water seemed very great; near the source it scalds the hand, which cannot be kept in it for the space of half a minute. The deposit of sulphur is very great; but the water is tasteless to the palate.<sup>a</sup>

There are two places of hot-springs on the eastern side of the Dead Sea. Thus in the valley of Beni-Hammad (which Burckhardt conjectures to be "the brook Zared" of Num. xxi. 12) such wells are found, with some ruined buildings near them. And, still more to the south, the valley of the stream El Ahsa, which enters, from the south-east, the southern back-water of the Dead Sea, not only offers masses of volcanic rock, but the water of the rivulet is tepid, caused by a hot spring which empties itself into the Ahsa from a side valley, higher up than where Burckhardt crossed the Wady El Ahsa.<sup>b</sup>

In concluding this notice of the thermal springs of the country, we shall only recall attention to the fact that they are all found near the valley of the Jordan and its lakes.

Of the lake commonly called the Dead Sea, near which the springs last described are found,

<sup>a</sup> 'Travels,' p. 467.

<sup>b</sup> Burckhardt, 390, 400.

we shall soon have occasion to speak more fully, and shall now only notice some of those volcanic indications which it so abundantly offers. Mr. Russegger observes that the mountains between Jerusalem and the Jordan, in the valley of the Jordan itself, and those around the basin of the Dead Sea, bear unequivocal evidence of volcanic agency, such as disruptions, upheavings, faults, &c.; proofs of which agency are still notorious in the continual earthquakes, hot springs, and formations of asphalt.<sup>a</sup>

As in the case of the Lake of Tiberias, some travellers have thought that the bed of the Dead Sea exhibited the appearance of the crater of a volcano. This Chateaubriand denies. He says,—“I cannot concur in the opinion of those who suppose that the Dead Sea is no other than the crater of a volcano. I have seen Vesuvius, Solfatara, Monte Nuovo in the lake of Fusino, the Peak of the Azores, the Mameliff opposite Carthage, and the unextinguished volcanoes of Auvergne; and I have remarked in all of them the same characteristics,—that is to say, mountains excavated in the form of a tunnel, lava, and ashes, which exhibited incontestable proofs of the agency of fire. But the Dead Sea, on the contrary, is a long lake, curved like a bow, enclosed between two chains of mountains, which exhibit no coherence of form or homogeneity of structure. These chains do not unite at the two extremities of the lake: they continue, in one direction, to border the valley of the Jordan, and, in the north, expand to enclose the Lake of Tiberias; while, on the other, they are seen to separate, and lose themselves in the sands of Yemen.<sup>b</sup> It is true that bitumen, hot springs, and phosphoric stones, are found in the eastern mountains, but there are none in the mountains opposite: nor does the presence of thermal waters, sulphur, and asphaltum, alone suffice to attest the anterior existence of a volcano.”<sup>c</sup>

We have quoted this, because it has been re-produced by later travellers,<sup>d</sup> and may hence chance to stand for more than it is worth. We have also thought the whole subject, as connected with an event which, in the other division of this work, has passed historically under our notice, claimed the somewhat extended attention which we have given to it in a note at the end of this chapter (\*), to which we now refer. In this place we shall now continue our own course.

In the region to which our attention is now directed—that of the Dead Sea—it is interesting to note how exactly present appearances coincide with the intimations which the Scriptures offer. The mines and sources of asphaltum, the “slime pits,” which, according to the Bible, existed there before the Vale of Siddim was desolated, are still there, and have given to the lake one of the most common of its names. There also we find the traces of that terrible convulsion by which Sodom and Gomorrah were overthrown, in the same “brimstone, and salt, and burning,” the same “salt-pits, and perpetual desolation,”<sup>e</sup> to which the sacred writers allude.

One instance of the occurrence of sulphur, which is so conspicuously mentioned in the Scriptural accounts, has just been noticed in Captain Mangles’ account of the hot-springs of the river Arnon. Not only the borders of the lake, but, in different parts, the plains and valleys to the east of it, exhibit remarkable sulphureous appearances. At a place about twenty-five miles eastward from the head of the lake, Buckingham remarked that the surface of the soil was “covered with patches of a yellowish white substance like powder of brimstone or sulphur, a fact remarked also in the valley of the Jordan, near the head of the Dead Sea, and almost in a line with this to the westward, at the distance of about thirty miles. The taste and smell of this powder was highly sulphureous; and my guide observed that the same substance was found in abundance all around the shores of the Dead Sea. It is beyond a doubt that these regions, from the Lake of Tiberias, southward, to the termination of the Lake of Asphaltes, have, at some very remote period, been subject to volcanic convulsions; and it is probable that the hot-springs of Tiberias, the bitumen of the Sea of Lot, and the sulphuric powder of the plains near it, all owe their existence to one common origin.” In continuation,

<sup>a</sup> ‘Atheusæum,’ No. 600.

<sup>b</sup> This is not correct: but the reader is aware that the southern mountains were unknown when Chateaubriand wrote.

<sup>c</sup> Itinéraire, tome ii. 180, edit. Brux. 1826.

<sup>d</sup> Lord Lyndsay, &c.

<sup>e</sup> Deut. xxix. 23: Zeph. ii. 9.

he thinks that the swallowing up of the cities of Sodom and Gomorrah may, even from the local appearances, well be concluded a historical fact, and accomplished probably by means of some great "volcanic operation," of which the Lake of Tiberias, the river Jordan, and the Dead Sea, bear so many indications.\*

To the various notices of the presence of sulphur which we have adduced in the preceding paragraphs, we shall only add the information of Burckhardt, that on the shore of the Dead Sea, towards the north, pieces of native sulphur are found at a small depth beneath the surface, and are used by the Arabs to cure diseases in their camels.<sup>b</sup> This, however, is not by any means confined to the north. At the opposite, or southern, extremity of the lake, lumps of nitre and fine sulphur, from the size of a nutmeg up to that of a small hen's egg, were found by Captains Irby and Mangles, in such a situation as rendered it clear to them that they had been brought down by the rain, and that their deposits must be sought in the cliffs. Dr. Shaw, observing that sulphur is found promiscuously with bitumen upon the shore, thought it possible that they had come up together from the bottom. But it now appears that if this be at all correct, it can only be so with reference to a portion of the sulphur which is found.

The bitumen of this part cannot be more fitly noticed than in this place. The interest attached to it, from its being mentioned in the most ancient book in the world, in alluding to the state of the country, before the overthrow of Sodom was attended with the effects which we now notice, has on more than one occasion been indicated.

As this substance is found in lumps upon the surface and western shore of the lake, it has been thought that it rose in a fluid state from sources at the bottom, and became hard by exposure to the air on the surface. "*I was informed*," says Shaw, "that the bitumen for which this lake has been always remarkable is mixed, at certain times, from the bottom of the lake in large hemispheres, which, as soon as they touch the surface, and are thereby acted upon by the external air, burst at once with great smoke and noise, like the *pulvis fulminans* of the chemists, and disperse themselves into a thousand pieces. But this only happens near the shore; for in greater depths, the eruptions are supposed to discover themselves in such columns of smoke as are now and then observed to arise from the lake. And, perhaps, to such eruptions as these we may attribute that variety of pits and hollows, not unlike the traces of many of our ancient lime-kilns, which are found in the neighbourhood of this lake."<sup>c</sup> Remembering the bitumen-pits mentioned in the Bible, this last circumstance is very observable. Pococke thinks it probable that there are subterraneous fires which throw up the bitumen at the bottom of the sea, where it may form itself into a mass, which may be broken by the motion of the water occasioned by high winds. All that is stated by both these authorities is very possible, excepting the last circumstance, for the lake is little visited by high winds, and the water is too dense and the basin too deep to allow any superficial agitation to exert any appreciable influence at the bottom. Other causes may, however, operate in detaching from the bottom any masses of bitumen which may have been there deposited from sub-aqueous sources.

But the information obtained by Seetzen and Burckhardt ascribes a different origin to the asphaltum of the Dead Sea. They were both informed by the natives of Kerek that the substance originates in the rocks on the eastern side of the lake. The latter traveller was informed that it came from the mountain which blocked up the passage along the eastern border of the lake, at a distance of about six miles south of the Arnon. The Arabs pretend that it oozes from the fissures of the cliff of this mountain, and collects in large pieces in the rocks below, where it gradually increases, and hardens, until it is rent asunder by the heat of the sun, with a loud explosion, and, falling into the water, is carried by the waves, in considerable quantities, to the opposite shores. The information which Seetzen obtained, some years before, at Kerek, does not differ from this in any important point. He learnt that the bitumen oozed from certain rocks on the eastern shore, forming gradually a thick crust, which, being detached by the wind, is carried along the surface of the water, to the western shore, where it is gathered by the Arabs, and conveyed in large lumps to Jerusalem. These lumps are so large, as to furnish a load to several camels. But Seetzen understood that the production in this way is slow, and

\* Arab Tribes, p. 90.

<sup>b</sup> Travels, 393.

<sup>c</sup> Travels, ii. 158; edit. 1808.

that it is only after an interval of some years, that any considerable quantity of asphaltum can be procured from the shores of the Dead Sea. The specimens thus collected differ from those obtained from the mines of Hasbeya, in the north, in being considerably more porous, and as having been apparently in a fluid state. In the state in which the asphaltum is usually found, it feels cold, like stone, but is as black as jet, and of exactly the same shining appearance. It is used as pitch, and also occupies a conspicuous place in the pharmacy of the country. The appearances which mummies offer confirm the testimonies of Pliny and other ancient writers, that the asphaltum of the Dead Sea was much used in the embalming of bodies in Egypt.

As to the local origin of this substance, it will be noticed that the accounts which have been given are either conjectural, or from the information of the natives. It appears to us that these accounts are not incompatible, and that all of them may be true. But if one account were to be preferred to the exclusion of the others, we should be inclined to rely most upon the information which such men as Seetzen and Burckhardt obtained at such a place as Kerek.

As here, near the Dead Sea, we are anxious to notice, not only traces of volcanic action, but also of the combustible materials which Scripture itself teaches us to look for in this neighbourhood,—this seems as proper a place as any for the mention of the igneous stones which are found on the shores of the lake. These are mentioned in such different terms by different travellers, that one is not always sure that they are speaking of the same substance. Van Egmont and Heymann, who travelled together, alone distinguish *two* sorts of combustible stone; for which reason we must give their account first. Along the northern shores of the Dead Sea, they picked up “several pieces of a kind of black flint, which burnt in the fire without any diminution in their size, though they lost considerably in weight; and, in burning, emitted a considerable stench. They are used in the country for fumigation against the plague.” Other travellers either do not notice this stone, or confound it with that which Van Egmont and Heymann proceed to notice, as follows:—“Among the mountains, near this sea, is also found a blackish stone, very much resembling the touchstone, and nearly of the same qualities. This is also inflammable, and as nauseous as that met with on the shore. The church of the holy sepulchre is paved with it.” It is a pity that the descriptions, in both instances, are not more clear. As one of these stones is found upon the beach, and the other upon the mountains, it might be presumed that both were really the same stone in different situations,—first, in its natural state on the mountains, and, next, as washed down to the beach by rains, and there rounded by the action of the waves, and superficially modified by the deposits of the lake, were it not that the stone first noticed is compared to flint, and the other to touchstone. As, however, it is difficult to collect a satisfactory distinction from mere differences of situation—between the shore and the mountain—in which stones are found, the stone which Hasselquist found on the shore may be identified with that which Van Egmont obtained in the mountains, if a better agreement is found between them and those which *both* travellers found on the beach. Hasselquist says that the stones along the north-western shore are all of quartz, of different sizes and colours. “Here,” he continues, “I found quartz stones in the form of a slate, which is one of the rarest natural curiosities which I got in my travels. If it was burnt, it smelt like bitumen; which proves that it had its origin from it, like all the slate of this country.”

Without being well able to account for the confusion of names applied to this remarkable product, we must at present suppose that the stone mentioned by Hasselquist, and at least one of the two mentioned by Van Egmont and Heymann, are the same which other writers notice under a singular variety of names,—such as, the Stone of Moses (the native name), fetid limestone, stinkstone, swinestone, and other equally agreeable appellations.

Pococke, describing it as “the Stone of Moses,” observes that it burns like a coal, and turns only to a white stone—not to ashes; and the fact that it smells, in burning, like the asphaltum, does not lead him to conclude, with Hasselquist, that it originated from that substance, but that the bitumen proceeded from it. He ingeniously supposes that a stratum of this stone under the Dead Sea is one part of the matter that feeds the subterraneous fires, and that the bitumen boils up out of it. Perhaps this matter might be set at rest if some traveller

would take the trouble to ascertain the character of the rock, from which the asphaltum is alleged to ooze, on the eastern shore of the lake.

Dr. Clarke, who had an opportunity of examining pieces of this stone which were brought to Jerusalem to be employed in the manufacture of rosaries and amulets, to which purposes it is largely applied. In this form it is worn as a charm against the plague; and the Doctor considers that a similar superstition prevailed in very early ages is proved by the fact of his having found amulets of the same substance in the subterranean chambers, below the pyramids of Sakkara in Upper Egypt. He describes it as "black fetid limestone." From his account it appears that the fetid effluvia are excited not only by burning, but, when partially decomposed, by friction, which is now known to be owing to the presence of sulphuretted hydrogen. All bituminous limestone has not this property; but that of the Dead Sea possesses it in a remarkable degree.

The asphaltic *mines* of Hasbeya, to which allusion has lately been made, adjoin the remoter source of the Jordan, and therefore may be regarded in connection with the phenomena which the valley of that river and its borders and extremities exhibit.<sup>a</sup> In the neighbourhood in question, the mountains are, for the most part, calcareous, and at the bottom of the hills are seen strata of trap. The mine of asphaltum is at the distance of a league W.S.W. from Hasbeya. It is situated on the declivity of a chalky hill, and the bitumen is found in large veins at about twenty feet below the surface. The pits are from six to twelve feet in diameter. The workmen descend by means of a rope and wheel; and in hewing out the bitumen leave columns of that substance at different intervals, to support the earth above. Pieces of several rotolas<sup>b</sup> in weight each are brought up. There are upwards of twenty-five of these pits, but the greater part of them are abandoned, and overgrown with shrubs. The workmen are only employed during the months of summer, and Burckhardt noticed only one pit that appeared to have been recently worked. The people of the neighbourhood employ the bitumen to secure their vines from insects; but the greater part of the produce is sold to the merchants of Damascus, Beirout, and Aleppo. The bitumen is called Hommar,<sup>c</sup> and the pits or wells Biar el Hommar.<sup>d</sup>

Returning to the neighbourhood of the Dead Sea, we may observe that the most southward volcanic indications which that neighbourhood offers, are those which occur in the Wady El Ahsa, and which, on account of the hot-springs there, have been noticed in a preceding page.

The region of the great valley which extends from the Dead Sea to the Gulf of Akaba has been too partially explored to enable us to speak positively as to the presence or absence of volcanic indications. We know not that any have been noticed by travellers, nor, from what has been noticed, are we led to expect that any will be found.

Proceeding farther to the south,—into the peninsula of Sinai,—however, volcanic indications are again discovered. No dependence can be placed upon such expressions occurring in travellers as "black volcanic-looking mountains," and so forth,—for mountains which are not volcanic may look black, and seem to exhibit the action of fire. We have seen such misleading expressions applied to mountains which we know, from other sources, to have nothing volcanic in their nature, however black may be their looks. Burckhardt, who is still, and is likely long to remain, the first and most trustworthy authority in all that relates to the peninsula of Sinai, observes that there are no traces of volcanic action in the more elevated regions of Sinai; but his attention was attracted to some striking appearances in the lower region, on the eastern shore towards the point, or southern extremity of the peninsula. Sherm is about nine miles to the north of the terminating point, Ras Mohammed; and here the traveller states,—“From Sherm we rode an hour and a quarter among low hills near the shore. Here I saw, for the first and only time in this peninsula, volcanic rocks. For a dis-

<sup>a</sup> Burckhardt, 394. Seetzen, 44.

<sup>b</sup> The rotola is about five pounds.

<sup>c</sup> This is just the word by which bitumen is designated in the Hebrew Scriptures; and the original of the "slime-pits" in the Vale of Siddim is בְּרִאת הַמֶּלַח, *beerath chamar*,—the apparent difference is merely a difference in pronouncing the same words. The same things are thus called by the same names now as they were four thousand years ago. The same name, Hommar, is also borne by the asphaltic cliffs east of the Dead Sea.

<sup>d</sup> Burckhardt, 34. Seetzen, 15.

tance of about two miles the hills presented perpendicular cliffs, formed in half circles, none of them being more than sixty to eighty feet in height; in other places there was an appearance of volcanic craters. The rock is black, with sometimes a slight red appearance, full of cavities, and of a rough surface; on the road lay a few stones, which had separated themselves from above. The cliffs were covered by deep layers of sand, and the valleys at their feet were also overspread with it. It is possible that other rocks of the same kind may be found towards Ras Abou Mohammed, and hence may have arisen the term of black (*μέλανα ὄρη*), applied to these mountains by the Greeks. It should be observed, however, that low sand-hills intervene between the volcanic rocks and the sea, and that above them, towards the higher mountains, no traces of lava are found, which seems to show that volcanic matter is confined to this spot."<sup>a</sup>

That this spot exhibits the only traces of volcanic action in the lower region of the peninsula cannot yet perhaps be affirmed. But we are not aware that any other indications have been found; for, although, with reference to Wady Bodera—another and distant point on the opposite side of the peninsula—Lord Lyndsay says that "all its mountains are more or less volcanic-looking, some of them resembling the heaps of cinders thrown out from an iron-foundry,"—Burckhardt himself is more to be trusted in virtue of the more precise language in which he describes the very same valley as consisting of sand-rock, and its ground deeply covered with sand.

When Burckhardt says that the Lower Sinai alone exhibits traces of volcanic action, he must of course be understood to speak, in the popular sense, of the more easily recognizable and (if we are right in so using the word) *secondary* volcanic action. But it appears more clearly from his own descriptions than could otherwise be the case, that the peninsula in general, and the Upper Sinai, in particular, exhibits more marked traces of *primary* volcanic commotion than can be found in any part of the extensive tract which we have passed under review. The super-position of unstratified crystalline rocks in the Upper Sinai, and the abundant manifestation of various trap-rocks along the eastern shore, equally suggest to the geologist the action of internal heat in ages very remote. The very prominent appearance in this peninsula of rocks usually considered ignigenous, will have struck the reader in the geological statement which the preceding chapter contains.

We have now surveyed, with a view to the volcanic indications it might offer, the whole long line of country, extending from the mountains of Lebanon to the uttermost cape of the Sinai peninsula. Desiring to keep as nearly as possible to the immediate borders of the prolonged basins formed by the valley of the Jordan and the Gulf of Akaba, we refused to turn aside to collect the volcanic indications which are offered by the country to the south of Damascus, and to the east of the lands occupied by the tribes beyond Jordan.

To the east of the regions of Bashan and of Gilead extends a broad and very even plain, which, although below the level of the high plains nearer to the Jordan, is much above the level of the valley through which that river flows, and of the lakes which belong to it. This plain, which has from twenty-five to thirty miles of average breadth, and about fifty of extreme length, appears to be the district to which the name of Haouran properly belongs,<sup>b</sup> although that name appears to be also used more comprehensively, so as to embrace the districts more eastward which have also separate names. The northern portion of this plain is bounded on the east by a remarkable rocky district, called Ledja, about twenty-five miles broad in the widest (or southern) part, and, perhaps, thirty miles in length from north to south. Beyond this district southward, and bounding on the east the southern part of the plain of Haouran, is a mountainous district which bears the same name (Jebel Haouran) as that plain. Beyond these mountains eastward, is the unexplored region called Szaffa, which we only know from the reports collected by Burckhardt, as resembling the Ledja in its characteristics, and being three days' journey in circuit. (\*)

The extensive tract of country comprehending these several districts, still more even than

<sup>a</sup> 'Travels,' p. 529.

<sup>b</sup> It is mentioned once by this name in the Old Testament, Ezek. xlvii. 17; and appears to have comprehended the Auranitis and the greater part of the Itura, which the New Testament specifies.

that which lies nearer the Jordan, was utterly unknown till the present century. Seetzen was the first to explore it in some parts, and he furnished to the European public the first notions of its physical as well as moral condition. It was afterwards more extensively traversed and more minutely described by Burckhardt; and although later travellers have, since the change of government, ranged the country with a degree of facility and safety unknown in his time, none of them have added any information of importance to that which he supplied.

The immense plain of the Haouran is sometimes perfectly level for miles together, sometimes it is slightly undulating, and here and there are seen low round hills, on the declivities or at the foot of which most of the villages of the country are situated. The soil is naturally rich, and needs but the application of water to render it abundantly fertile: hence for some time after the season of rain, and wherever moisture is present, the plain is covered with the most luxuriant wild herbage. Artificial meadows can hardly be finer than these desert fields; and it is this which renders the Haouran a favourite resort of the Bedouins. *This* it may be important to note historically, concerning a country so close on the Hebrew border. The district is, however, bare of trees, which is true of the whole country, except among the Haouran mountains, where groves of oak and other trees are found.

The mountains comprehended under the name of Jebel Haouran have been less adequately explored and described than the plain. Viewed from the distance westward, they exhibit a broken outline, and are not of very considerable elevation from the plain; but their summits have been seen covered with snow in the middle of March. The highest mountain is the Kelb, or Kelab Haouran, which is a cone arising from the lower ridge of the mountains. This is barren on the south and east sides, but fertile on the north and west. Its base is surrounded by a forest, and Burckhardt was told that the ascent from that forest to the summit would occupy an hour; and that from thence a prospect of "the sea" [qy. the Dead Sea?] might be obtained in clear weather. This traveller states the characteristics of several of the inferior mountains of this region; but, unfortunately, he neglects to notice the geological construction, except in one instance, when his attention being particularly engaged by the old castle of Szalkhat, which stands upon one of the exterior hills of this group, towards the south, he observes that the hill itself "consists of alternate layers of the common black tufwacke of the country, and of a very porous, deep red, and often rose-coloured pumice-stone." As he elsewhere observes that this same black stone is found all over the country, and is *the only species* which it offers, we may presume that it is also the principal constituent of the other mountains.

The aspect of the rocky district of Ledja is singular, and far from pleasing. It presents a level tract, covered with heaps of black stones, and small irregular-shaped rocks, without a single agreeable object for the eye to repose on, except in the patches of meadow which are sparingly interspersed among the stones. In the central part of this district, called by Burckhardt the Inner Ledja, the ground is more uneven, the rocks higher, and the roads more difficult.<sup>a</sup>

It should be observed that this same black stone is also found all over the Haouran, in a more dispersed form: that masses of it are also found beyond this plain, even to the borders of the Jordan and the Dead Sea. Its presence at various points on the eastern side of the Jordan's valley has indeed been noticed already by us, and its character described: for this is doubtless that black stone which has been so often mentioned, and to which, under the various names of black basalt, black porous tufa, black tufwacke, black stone (or tufwacke) of the Haouran, or of the Ledja, various travellers—Seetzen, Burckhardt, Buckingham, and others—have concurred in referring to a volcanic origin. It is for this reason that we have taken occasion to describe the whole district in this place and under the present head.

From a comparison of all the various notices of this black stone, we collect that the masses in and about the Ledja are larger, more dense, and more thickly set than elsewhere; and that progressively, as we remove from the Ledja, the masses become smaller, more dispersed, and of more porous texture. If, therefore, these stones be the result of volcanic action, we are entitled to consider that the Ledja was the centre of that action, from which the black stone

<sup>a</sup> Burckhardt, 51, 56, 59, 65, 79, 93, 110, 192, 246, 296; Buckingham's 'Travels among the Arab Tribes,' 159, 227, 284; Lord Lindsay, ii. 131.

was dispersed widely over the neighbouring region. That the masses of this stone which are found near the valley of the Jordan and its lakes *might* proceed from volcanic explosion in the Ledja, is, physically, quite possible; but, all things considered, and particularly as it seems that the black stone along the Jordan is somewhat less dense than that of the Haouran, as well as from the appearance of the mountains at whose base the hot-springs of Tiberias rise, we incline to connect the black stone of the country of the Jordan with the other volcanic phenomena which that region exhibits.

The evidence of volcanic action in the Ledja does not rest merely upon the general appearance of that district or of its stone.

On the southern border of this district, towards the Haouran mountains, is a town or village named Nedjeroun. This town is surrounded by a perfect labyrinth of rocks—broad sheets and rugged masses; which, says Lord Lyndsay, offers an appearance more like that of the bottom of the crater of Vesuvius, as he saw it in 1830, than anything else to which he could compare it. Buckingham still more distinctly describes the entrance into Nedjeroun as being over beds of rock of a singular kind, having the appearance of volcanic lava suddenly cooled while in the act of boiling in a liquid heat; there being globular masses in some parts, like the bubbles on boiling pitch, and in others a kind of spiral furrows, like the impressions often seen in a semi-liquid when put into violent motion; and on striking it with any hard substance it gave forth a ringing sound, like metal. Several tanks or reservoirs have, however, been excavated in this hard material, in which the rain-water continues to be preserved.

This spot, it will be observed, is about the middle of the southern border-line of this district. More to the east, that is, in the south-eastern angle of the Ledja, several Tels, or detached hills, are found near one another, among or near the low exterior ridges of the Jebel Haouran in that direction. Passing between some of them, Burckhardt observed the ground to be covered with pieces of porous tufa and pumice-stone; and he adds, that the western side of one of these hills (the Tel Shoba) appears to have been the crater of a volcano, as well from the character of the minerals which lie assembled on that side of the hill, as from the form of the hill itself, which resembles that of a crater, while the neighbouring hills have rounded tops, without any sharp angles.

In concluding this rapid survey of the various volcanic indications which the country offers, it may be proper to recapitulate the resulting information.

It appears, then, that the great valley of the Jordan, from near its commencement to beyond the asphaltic lake, exhibits numerous traces of the presence of combustible materials and principles, and of the results of actual combustion in some former time or times; that indications of this sort are most abundant near the Lakes of Gennesareth and Asphaltites; that the basin of the former was probably, and of the latter certainly, formed by the operation of such combustion; and that, in the progress considerably to the south of this latter lake, no similar indications of secondary volcanic action have been found till we reach the furthest shores of the Sinai peninsula. That, throughout this line, the indications are more abundant on the eastern than on the western side of the valley of the Jordan, even independently of the separate volcanic manifestations which have been discovered in the Ledja, and the effects of which have been scattered widely over the surrounding districts; and that, finally, such indications as may be found on the opposite, or western, side of the Jordan's valley, are confined to the vicinity of the Lake of Tiberias.

Further, it appears that indications of what we may call *primary* volcanic action, by the presence and superposition of ignigenous rocks, are most strikingly and conspicuously manifested in the upper mountains of the Sinai peninsula, though not entirely confined to it, as something of the sort may be seen to the west of the Lake of Tiberias. The mountainous region in which the peninsula of Sinai terminates is, indeed, so marked and distinct, and so abruptly cut off, by the intersecting El Tyh hills, from the northward desert of alternating gravel, sand, and chalk, as might suggest to one, looking deep and far around him from the loftier summits of these renowned mountains, that the now separating El Tyh hills did, in some far remote age, form the seaward frontier of this region, and that the mountains which rise



beyond, and now terminate the peninsula, were elevated by subaqueous volcanic agencies, which alone can adequately account for the phenomena which they exhibit, and to which such phenomena are usually referred.

As there is understood to be an intimate physical connection between volcanic indications and the agencies by which earthquakes are produced, such observations as the latter phenomena require may very suitably be introduced in this place.

In the first place, it is obvious to remark on the striking illustration of historical over even physical evidence, which is afforded by the fact, that, while many stoutly disbelieve the evidence offered by such plain and palpable volcanic indications as those which we have adduced, no one ever questions that Palestine is very liable to be visited by earthquakes, although there is no physical evidence for this fact, or only such as arises from the connection between them and volcanic manifestations. There is no question about earthquakes. The Scriptures abound in allusions to them and figures drawn from them; and history, from very ancient times down to our own day, bears repeated testimony to the devastation they have occasioned. There are, however, only two earthquakes expressly named in Scripture. The first was of such serious importance as to suggest a sort of date for circumstances as having occurred so long before or after the earthquake. Thus Amos (i. 1) dates his vision "two years before the earthquake;" and, with reference to the same earthquake, another prophet reminds the people how they "fled before the earthquake, in the days of Uzziah, king of Judah." <sup>a</sup> Chronological comparisons would fix this earthquake to near the end of this king's reign, although Josephus connects it with his sacrilegious attempt to minister in the Temple; and informs us that, on this occasion, the Temple was rent, and that the shock was attended by a sort of hill-slip, whereby the half of a mountain near Jerusalem was broken off, and propelled forward half a mile, and, where it stopped, blocked up the road and the royal gardens. <sup>b</sup> It seems, indeed, that such slips of the land do not unusually attend earthquake shocks in this region. An instance has been mentioned already (p. xxxiv); and that such incidents were things of familiar knowledge to the Jewish people, appears from the allusions of the Psalmist, when he speaks of the "mountains being carried into the midst of the sea;" <sup>c</sup> of their "skipping like rams, and the little hills like lambs;" <sup>d</sup> and also of the Prophet, when he declares that "the earth shall reel to and fro like a drunkard, and be removed like a cottage." <sup>e</sup> Hence also the same resort, in the sublime imagery of the sacred prophets and poets, to figures recognizable by the people to whom they spoke, leads them to describe the earth as shaken by the Lord in his anger, as terrified by his indignation, and as trembling at his presence. <sup>f</sup> The other instance mentioned in the Scriptures, is that of the extraordinary quaking of the earth and rending of the rocks which attended the crucifixion of our Lord. <sup>g</sup>

Our information concerning the earthquakes which have been experienced in Palestine is considerably defective. But how unusually frequent and destructive they have been in Syria generally, as well as in Asia Minor, the reader of history needs not be told; and although we may suspect that Palestine, in particular, could not be insensible to those great and terrible earthquakes which have so repeatedly overthrown Antioch and the other cities of Syria, we dare not, in the absence of the positive information which there is no means of obtaining, insist upon this; but give our chief attention to those cases by which the Holy Land is known to have been more or less affected.

But it may be well to premise two or three physical facts which we have met with; and although some of them apply to Syria generally, there is no doubt that they equally apply to Palestine in particular. The coast is more subject to earthquakes than any part of the country; <sup>h</sup> the more elevated parts being comparatively exempt from their visitation; <sup>i</sup> and from this, perhaps, proceeds the comparative exemption of Jerusalem—the situation of which is very elevated—from this calamity. The Psalmist is supposed to refer to this in Ps. xlv. 2—5. Dr.

<sup>a</sup> Zech. xiv. 5.

<sup>b</sup> Antiq. l. ix. c. 10. sec. 4.

<sup>c</sup> Ps. xlv. 2.

<sup>d</sup> Ps. cxiv. 4. 6.

<sup>e</sup> Isa. xxiv. 20.

<sup>f</sup> As in Ps. ciii. 11. 32., xc. 9. 1 Chron. xvi. 30. Jer. x. 12, li. 15. 1 Kings ii. 8. &c.

<sup>g</sup> Matt. xxvii. 57.

<sup>h</sup> Volney, i. 282.

<sup>i</sup> Guill. Tyre. in Gesta Dei per Francos, lib. xx. cap. 19.

Shaw observed in Barbary that earthquakes occurred generally at the end of summer or autumn, a day or two after great rains. "The cause," he says, "may perhaps arise from the extraordinary constipation, or closeness, of the earth's surface at such times, whereby the subterraneous streams (?) will be either sent back or confined; whereas, in summer, the whole country being full of deep chinks, or chasms, the inflammable particles have an easier escape.\* As the true theory of earthquakes appears not yet to have been distinguished, we shall say nothing of this one, but proceed to state that Volney cites Shaw's account of the time and circumstances of earthquakes in Barbary, as entirely applicable to Syria also. What Dr. Russell says on the subject of earthquakes, applies in particular to Aleppo; yet, from several slight intimations in histories and travels, we imagine it may also be applicable to those parts of Palestine which are most subject to earthquakes. He says:—"There are few years that earthquakes are not felt at Aleppo; but being in general slight, and so long a time having elapsed since the city has suffered much from them,<sup>b</sup> the dread they occasion is only momentary, unless the public happen to be alarmed by exaggerated accounts of what may, at the same time, have befallen other towns of Syria; and then, indeed, the return of such slight shocks, as would otherwise have passed unregarded, spread universal terror. When the shocks happen in the daytime, they often are not felt by persons walking in the streets, or in the crowded bazaars; but in the silence of the night, they are often dreadful, and make an awful impression on persons roused from sleep."<sup>c</sup>

As earthquakes are *events*, we are somewhat doubtful whether they more properly belong to this or to the other division of our subject. But, upon the whole, it has seemed best to bring together in this place some particulars concerning the more remarkable earthquakes which have occurred in Palestine: as the reader will thus be the better enabled, than by accounts dispersed through the historical portion of the work, to estimate the character of such calamities, as exhibited in that country.

We shall now specify the principal earthquakes which history records to have visited the Holy Land, dwelling particularly on those of 1202 and 1837, seeing that our information concerning them throws more light upon the character of these visitations than any other accounts supply.

In the thirty-first year before Christ, and in the seventh year of the reign of Herod the Great, the whole land of Judea was shaken by such an earthquake as had never before been experienced. Many thousand people<sup>d</sup> were buried under the ruins of their houses, and the cattle were destroyed in vast numbers. It was attended with some historical consequences which it will be our duty to notice in another place.

How far Palestine was affected by the dreadful earthquakes which visited most of the provinces of the eastern empire in the years 365, 394, and 396, we are not informed very precisely: we know, however, that the shock of the former, on the morning of the twenty-first day of July, overthrew several cities in Palestine, although its effects were the most ruinous in the island of Crete, where the shock was the most violent. It appears also, incidentally, in the accounts which are left, that many cities of Palestine had been subverted by preceding earthquakes, of which no historical notices remain. From comparing the notices which we have collected, we find data for concluding that Palestine is never free from the effects of earthquakes, which are, at the same time, felt in the north of Syria and in Egypt. We have, therefore, no doubt that the country suffered from the violent earthquakes which in 447 overturned many towers and stately buildings in Constantinople, Antioch, and *Alexandria*; and which in different parts of the eastern empire laid many cities in the dust.<sup>e</sup>

We may well conclude that Palestine shared in the calamities which were caused, in the east, by some of the numerous earthquakes which distinguished the reign of Justinian. As,

\* Travels, i. 278. 8vo edit.

<sup>b</sup> Few of our readers can be unaware how dreadfully Aleppo has suffered from repeated earthquakes *since* the time of Dr. Russell.

<sup>c</sup> Nat. Hist. of Aleppo, i. 72, 73. 2nd edit.

<sup>d</sup> The Jewish historian gives the number of slain as 10,000 in one place (Ant. i. xvi. c. 7) and as 20,000 in another (Bell. Jud. l. i. c. 14); which latter number seems to agree best with the large terms which he employs in the description.

<sup>e</sup> Ammian. Marcell. xxvi. 10; Hier. Chron. 268; Macrob. Chron.; Ambros. de diversis. iii. 116; August. de urb. Rom. excid. c. vi. p. 222. For the first of these earthquakes (365), see also Gibbon, ch. xxvi.

however, we have no positive information to adduce, we shall only note the probability, suggested by *ascertained* facts, that this country felt at least the remoter vibrations of the earthquakes which ruined Antioch, which tore a mountain from Libanus and cast it into the sea, and by which the coast of Phœnicia was ravaged and Beirout (Berytus) destroyed.<sup>a</sup>

In the year 748, the emperor Constantine Copronymus was warring with the Saracens in Syria and Palestine, when he was diverted from following up some advantages he had gained by the frequent earthquakes which occurred in those provinces at that time, and by which many cities in them were swallowed up and others ruined; while some, if Nicephorus may be credited, were removed, without any considerable damage, six miles and upwards from their former sites. These earthquakes are said—as is often said of recent earthquakes—to have been by far the most destructive that had been known in any age.<sup>b</sup>

The Armenian historian, Abulfaragi, records several earthquakes by which Syria was visited in those ages. That country suffered largely from the earthquake which convulsed the south-west of Asia in the month Shaaban (December), A.H. 242 (A.D. 856). Very terrible earthquakes were felt in Syria in the month Rajam (August), A.H. 552 (A.D. 1157), by which large numbers of people were destroyed, and many towns and districts devastated, particularly those of Emesa, Hamah, Shizur, Caphar, Tab (Tabariah?), Moarrah, Apamea, Homs, Arka, Ladikiah, Tripoli, and Antioch. During another earthquake, in A.D. 1034, the earth opened in many parts of Syria, and many people were swallowed up. On this occasion even Jerusalem suffered, for parts of the walls were thrown down. Half of Ptolemais, the lighthouse at Ascalon, and the higher parts of Gaza, were overthrown. The sea retreated three parasangs, and many people who were employed in collecting the fish left upon the strand were swallowed up by the sudden return of the waters.<sup>c</sup>

We hear of no more earthquakes till the times of the Crusaders. William of Tyre gives a very lively account of the terrible earthquake which ravaged Syria and the east in the year 1170. He says this earthquake was felt to the ends of the earth, by which we may understand that it was more than usually extensive in its effects. Indeed, he says that the shocks were so violent, that nothing like this convulsion had ever been read of in ancient histories or was within the experience of any living man. The strongest and most ancient cities were overthrown to their foundations, and the inhabitants buried in their ruins. Nothing was anywhere heard but lamentable cries, nothing seen but funereal sights and tears. Among the cities overthrown were some of the largest and noblest of Syria and Phœnicia. On the coast, the cities of Jebail, Ladikiah, and Tripoli, were destroyed, and the strong and lofty towers of Tyre were cast down; and inland the cities of Aleppo, Cæsarea, Hamah, Emesa, and others of less note, with a vast number of castles and fortresses, were overthrown. This indicates a course often taken by the earthquakes which visit this region. Palestine, in the more limited sense, appears to have suffered but little; and the archbishop makes the important observation which we have already adduced, that the more elevated parts of Palestine were exempted from the evils which this earthquake caused.<sup>d</sup>

The first good and clear account of an earthquake in this region, is that which the Arabian historian, Abdallatiff, gives of the very terrible one which ravaged Syria and Egypt on the morning of Monday, the 20th of May, 1202. The historian, who was himself in Egypt (Alexandria), says, that the first shock was so violent, that every one sprung from his bed and poured forth cries to Almighty God. The earthquake lasted a long time, and its shocks were compared to the motion given to a sieve, or to that of a bird as it alternately raises and drops its wings in flight. There were in all three very violent shocks which shook the buildings, broke the roofs and rafters, and threatened with ruin the houses which were in bad condition, and those which were built high, or which stood on elevated situations. There were some fresh shocks towards the middle of the same day, but they were so slight and of such momentary duration, that they were not generally noticed. The night had been so extremely cold, that people had been obliged to cover themselves with more clothes than was usual at

<sup>a</sup> Gibbon, ch. xliii.

<sup>b</sup> Niceph. Theoph. ad ann. Const. 6.

<sup>c</sup> Hist. Dynast. Ed. Pocock. Oxon. 1663, pp. 170, 392; Chron. Syriacum, Lips. 1789, p. 228.

<sup>d</sup> Historia Belli Sacri, lib. xx. c. 19.

that time of the year; but the ensuing day was as remarkable for its extreme heat, attended by a most suffocating and pestilential wind (the simoom). Egypt had rarely experienced such an earthquake as this.

From intelligence which afterwards arrived, it appeared that this earthquake had ravaged the whole length and breadth of Syria, where its effects had been far more disastrous than in Egypt. Many places disappeared entirely, without leaving any trace of their existence, and multitudes of men perished. But the historian *knew not that any city in all Syria had suffered less than Jerusalem*, by which only some very slight damages had been sustained. The Moslem annalist fails not, also, to note that the ravages of the earthquake had been much more extensive and fatal in the districts occupied by the Franks (Crusaders) in Syria, than in those possessed by the Mohammedans. On the coasts, the sea rose in an unusual manner, producing much destruction and alarm; and when the waves retired, a great number of vessels and fishes were found high upon the shore. In different places the waters seemed to open, and to gather themselves into great masses, like mountains, with deep valleys between.

In concluding his account of this awful visitation, Abdallatiff gives copies of two letters which he received from Hamah and Damascus, affording some interesting details of the manner in which Syria had been affected by it. The Hamah correspondent states that the earthquake had been felt twice on the Monday; the first time it lasted about an hour, but the second was not quite so long, though much stronger. And on the Tuesday two more shocks were felt; the first about noon, and the other about three hours after. As usual in such cases, everybody supposed that the earthquake was the precursor of the last day. The letter is rather meagre of facts: but it states that the fortresses at Hamah and Baalbec had been much damaged; and that several public and private buildings had fallen down in Damascus, burying many people in their ruins.

This last intelligence is confirmed by the Damascus correspondent, who specifies the buildings which had been overthrown; and then proceeds to state the news which had been received at Damascus from other places, particularly from Palestine. Baniyas and Safet had been in part overthrown. Bysan (*Bethshan*) was entirely destroyed; as were also Arka<sup>a</sup> and Safitha.<sup>b</sup> At Naplouse not a wall was left standing, save in the street occupied by the Samaritans: "*but it is said that Jerusalem has, thank God, suffered nothing.*" A third part of the city of Tyre had been overthrown, as well as the greater part of Acre. Most of the towns in the Haouran had been swallowed up, and it was not yet known that any had been spared. In Lebanon there was a defile between two mountains: there the mountains had met and shut in for ever the persons, about 200 in number, who were then in the valley. The writer of this letter adds that shocks of the earthquake continued to be felt for four days, by day and by night; and concludes with recommending himself to the care of God's good providence.

The great earthquake of 1759 is thus noticed by Volney: "In our time (in 1759) there happened one which caused the greatest ravages. It is said to have destroyed, in the valley of Baalbec alone, upwards of 20,000 persons, a loss which has never been repaired. For three months the shocks of it terrified the inhabitants so much as to make them abandon their houses, and dwell under tents."

A very full account of this earthquake was furnished by Dr. Patrick Russell, the physician to the British factory at Aleppo, in a letter to his brother, Dr. Alexander Russell,<sup>c</sup> by whom it was communicated to the Royal Society, in whose 'Transactions' it appears.<sup>d</sup> As a paper on this subject from a man of science is of more than ordinary value, we shall here state the particulars which seem of the most importance.

The spring of the year was unusually dry, the summer temperate, and the autumn, although the rains came on in September, might be esteemed much drier than in ordinary years. On the morning of the 10th of June, a slight shock of an earthquake was felt at Aleppo, and was,

<sup>a</sup> De Sacy is doubtless correct in concluding this to be the Arka of Phœnicia, noticed in p. 7 of the present work.

<sup>b</sup> From the indications of De Sacy, this may seem to have been in or on the western border of the desolate region of Szaflia, concerning which there is a note at the end of this chapter.

<sup>c</sup> The author of 'The Natural History of Aleppo.' Dr. A. Russell had been many years physician to the factory at Aleppo, from which office he retired in 1753, and was succeeded by his brother, Dr. P. Russell, the writer of this account.

<sup>d</sup> Vol. ii. pt. ii. pp. 529—534. 1760.

as usual, soon forgot; and it was not ascertained that this shock had been attended with severe effects in any other place. On the 30th of October, about four in the morning, a pretty severe shock occurred, which lasted rather more than a minute, but did no damage at Aleppo: and about ten minutes after, there was another shock, but the tremulous motion was less violent, and did not continue above fifteen seconds. It had rained a little the preceding evening; and when the earthquake happened, the west wind blew fresh, the sky was cloudy, and it lightened. This earthquake occasioned little sensation at Aleppo, and that little had subsided, when attention was recalled to it by the arrival of intelligence from Damascus that the same shock which had been experienced at Aleppo had been felt there, followed by several others, and that considerable damage had been done. From that time continual accounts arrived from Tripoli, Sidon, Acre, and the whole coast of Syria, describing the damages which this earthquake had occasioned. These reports excited great alarm among the people, and it soon appeared that the worst of their apprehensions were to be realised.

The morning of the 25th November had been very serene; some clouds arose in the afternoon, and the evening was remarkably hazy, with little or no wind, when, about half an hour after seven, the earthquake came on. The motion was at first gently tremulous, increasing by degrees till the vibrations became more distinct, and, at the same time, so strong as to shake the walls of the houses with considerable violence; they then became more gentle, and then again more violent, and thus changed alternately several times during the shock, which lasted altogether about two minutes. In about eight minutes after this was over, a slight shock of a few seconds duration succeeded. The thermometer was at 50°, and the barometer was at 28·9, the mercury undergoing no alteration. There was little or no wind during the night, and the sky was clear, excepting some clouds which hung about the moon. At a quarter past four the next morning, there was another shock, which lasted somewhat less than a minute, and was hardly so strong as that of the preceding night.

The night of the 26th was rainy and cloudy, and at nine o'clock there was a slight shock of a few seconds: the motion this time appeared to be very deep, and was rather undulating than tremulous. The weather on the 27th was cloudy and rainy. From the midnight of the 25th, besides the shocks which have been mentioned, four or five slight shocks were felt; but Dr. Russell himself was not sensible of any till the morning of the 28th, when a short pulsatory shock was experienced. The same day at two o'clock there was a rather smart shock, lasting about forty seconds. From this time the Doctor was not sensible of any further shocks, though there were those who felt or imagined several slight vibrations every day.

It appears that the people of Aleppo were more frightened than hurt by these earthquakes. The buildings sustained little damage, and no one was killed. Other places suffered more severely. Antioch had many of its buildings overthrown, and some of its people killed. And from advices afterwards received, it appeared that the earthquake of the 25th had been particularly ruinous. One-third of Damascus was overthrown; and of the people unknown thousands perished in the ruins. The greater part of the survivors fled to the fields, where they remained, alarmed by the slightest shocks, and deterred by them from re-entering the city to attempt the relief of such persons as might yet be saved by clearing away the rubbish.

Tripoli suffered more than Aleppo. Three minars and many houses were thrown down, while the walls of many more were rent. The resident Franks and many of the natives took refuge in the open fields. At Sidon great part of the Franks' khan was overthrown, and some of the Europeans narrowly escaped with their lives. Acre and Ladikiah suffered little besides rents in some of the walls; but Safet, "the city set on a hill," was totally destroyed, and the greater part of the inhabitants perished.

There were several slight shocks in December and even in January, but none requiring particular notice. In one of his communications, dated the 7th December, Dr. Russell observes that the weather had for ten days been gloomy and rainy; a change which the people were willing to regard as favourable. At that time it often lightened at night, and thunder was heard in the distance.<sup>a</sup>

<sup>a</sup> We have recorded these meteorological intimations, as some may be disposed to lay stress upon them; but that the state of the atmosphere can have anything to do with earthquakes or volcanoes appears very doubtful.

Syria was visited by a most terrible earthquake in the year 1822. On the 13th of August, about nine o'clock in the evening, Aleppo, the third city of the Ottoman empire, and one of the most beautiful, whose buildings were entirely of stone, and some of which deserved the name of palaces, was, in one instant, overthrown to its foundations, and thousands of its inhabitants buried in the ruins.<sup>a</sup> Antioch, Latakia, and many other towns and villages in the pashalic of Aleppo, were also destroyed. Very affecting accounts of this calamity were given at the time by Mr. John Barker, the British consul in Syria, and by his brother, Mr. Benjamin Barker, the agent of the Bible Society,—the former writing from the ruins of Antioch, and the latter from those of Aleppo. But as their accounts furnish little of such information as we seek, and as the effects of this convulsion appear to have been scarcely felt in Palestine, we shall pass on to the recent and very terrible visitation which brought in the new year of 1837.

Accounts of this earthquake have been furnished by Mr. Moore, the consul-general at Beirout; by the Rev. Mr. Thompson, an American missionary; and by Mr. Calman, a Jew converted to Christianity and employed on a mission to the Jews in Palestine. These two gentlemen being then at Beirout, immediately entered the Holy Land with the British agent at Sidon, and visited the neighbourhood of the Lake of Tiberias, where the devastation had been greatest, with the view of offering all the assistance in their power to the sufferers. They, therefore, had advantages in giving an account of an earthquake in Palestine not possessed by any one (except William of Tyre) who have given particulars of other earthquakes in that country. The following paragraphs are, therefore, drawn chiefly from the account furnished by Mr. Calman,<sup>b</sup> with the addition of a few particulars from the narratives of Mr. Moore and Mr. Thompson.

Palestine, and, in particular, the neighbourhood of the Lake of Tiberias, appears to have been the very centre of this mighty concussion, which was felt even to the mountains of Sinai. Indeed, Mr. Moore states that it had been ascertained that the earthquake was felt in a line of 500 miles in length by 90 in breadth. The violence of the shock, however, spent itself about half way between Beirout and Jerusalem; or, in other words, the marks of devastation increased as the traveller approached the districts of Safet and Tiberias, and decreased in receding from them—Upper Galilee being the principal scene of ruin.

The travellers, who proceeded to visit the scene of desolation from Beirout, found that the farther they advanced to the S.E., to a certain point, the more violent the shock had been, and the more terrible its effects. In nearly all the places which they passed, where the earthquake was felt, nothing had been left behind but destruction, desolation, and human suffering. They omit details till they come to Gish, a once well-built village, situated upon a high mountain, two hours to the N.W. of Safet, which was found to be so thoroughly destroyed and overthrown, that not a house—not even a single stone—had been permitted to keep its place. Of 250 inhabitants, all, save 15, had perished.<sup>c</sup>

The substantial information which Mr. Calman gives concerning this earthquake is comprised within a few pages at the latter end of his publication, and which we cannot do better than transcribe almost entire.

“Safet, as I have above described, stood on the steep declivity of a mountain; and though the houses were two stories high, the roofs of the lower streets formed part of the roadway for the inhabitants of the upper. There were no fewer than twenty such streets, and, when the earthquake brought down the buildings, the lower streets received, of course, the rubbish of those above; and the lower the streets were, the greater the quantity of rubbish they received. There were, therefore, some streets and houses where the accumulation of rubbish was enormous, and the depth from the lower apartments to the top of the ruins quite incredible, so that no voice could have penetrated half its thickness. These circumstances are necessary to render intelligible the narrative to which I have referred. . . . .

<sup>a</sup> Accounts, as usual, vary: the most common one states that upwards of two-thirds of the city were entirely destroyed, and that from 25,000 to 30,000 was the number of those who perished.

<sup>b</sup> ‘Description of Part of the Scene of the late great Earthquake in Syria. In a Letter from E. S. Calman, Beirout. 1837.’ The account given by his companion, Mr. Thompson, was published in the American periodicals, and we have, as yet, only seen extracts from it.

<sup>c</sup> Calman, i. 3.

“The recurrence of the earthquake, which has been a daily visitor since the first shock, and sometimes very violent, is a great addition to the misery of the people. One of the shocks, on Wednesday afternoon, the 18th, was so violent at Safet, that many parts of the ruins which had stood were shaken down. The rattling noise of the stones, and the cries of those who were digging in search of their friends, brought renewed consternation to every heart; and the dust raised by the new overthrow, led those who were higher up to believe that smoke was issuing from the ground, and that fire would finally follow, and consume them and their tents. A similar shock had taken place on the previous Monday evening. These frightful visitations are not confined to the two cities above spoken of. Throughout the adjacent country, as far as Sidon, the inhabitants are in such apprehension of danger from the same source, that nearly all have abandoned their shattered houses, and fled for their lives into caves and holes of the rocks, or, if they can afford it, have erected booths. There was scarcely a cave on our way from Safet to Tabereah (*Tiberias*) in which there were not people; which reminded me of Lot, on his flight from Sodom, choosing a cave for his abode (Gen. xix. 30). To the same cause, of frequent earthquakes destroying the cities and houses, may, perhaps, be ascribed the habits from which the Horites, or dwellers in caverns in Mount Seir, derived their name (Gen. xiv. 6). A great part of the city of Tyre having been entirely destroyed, and the remaining houses so injured as to be unsafe, its inhabitants, without exception, have withdrawn from their houses, and now live on the beach, some in tents, and some in their large boats, which they have drawn on shore, and covered with canvass, where they now possess something like tranquillity of mind. The inmates of the latter seem rather as if in expectation of another flood, than of another earthquake.

“The neighbourhood of Gish, Safet, and Tabereah, bears other marks of the violence of the shock, besides the complete overthrow of those places, in the rents, of various dimensions, traversing the rocks. Not five minutes N.E. of Gish, on the same declivity, there is a rent in the solid rock upwards of sixty feet in length, from a foot to a foot and a half in breadth, and whose depth has not been sounded. Close to the latter two places, fissures in the rocks, in winding directions, stretching as far as the eye could reach, but not so wide as the one just mentioned, every now and then surprised us on our journey. In some places, even isolated rocks were rent. The people of Safet and Tabereah told us, that the motion of the earthquake there was felt to be perpendicular, not horizontal; so that it shook every stone from the foundation out of its place. They say the shock was attended with great noise.

“On the north side of Tabereah, numberless hot-springs burst out during the earthquake, and continued for a short time discharging torrents of hot mineral water, which made the lake swell to a most unusual height. Beyond Jordan, in the district of Bashan, volleys of fire were shot out of the ground to such an height, that those who saw it in its descent were led to believe that it came down from heaven. Mr. ———, at Jerusalem, who had a very narrow escape from the tumbling stones of the walls of his apartment, immediately on making his escape saw something like a long, brilliant star running from N. to S., probably the some volcanic fire seen by the people beyond Jordan. . . . .

“There is something not a little surprising in the irregular course pursued by the earthquake. Of villages and buildings within gun-shot of each other, one has been destroyed from the foundations, and at the other it has been scarcely felt, and no injury sustained. Gish was completely destroyed; while a village close to it was not at all injured, nor did its inhabitants feel the shock. While the city walls and towers of Tabereah could not withstand it, the mineral baths, about one mile to the south, and which, especially the new one, are comparatively slight buildings, suffered no injury. Lubia, Sedtsherah, and Ramma, villages situated near each other, about two hours N.W. of Tabereah, were all completely overthrown; while at Cana of Galilee, only half an hour distant from some of these, the motion was not felt. Again, another village called Renna, about half-way between Cana and Nazareth, being within half an hour of either place, was utterly destroyed; while Nazareth itself suffered comparatively little.

“It has been sought to explain the phenomenon by the supposition, that the places not affected by the shock stand upon strata already detached, by some former convulsion, from

the main strata ; and that the places situated on the latter have given way to the impetuosity of the shock.”

It appears that the Lake of Tiberias experienced a violent concussion during the whole time the earthquake lasted ; and that its waters rose, and swept away many of the inhabitants of Tabereah. On this, as on other occasions, Jerusalem escaped with comparative impunity, and was but slightly affected ; but Mr. Calman mentions that the minars on the Mount of Olives were shaken down by the earthquake.

Authentic accounts of all the places in Palestine destroyed or injured by the earthquake of 1837 would be of much value for topographical purposes. We have three lists before us ; those of Mr. Moore, Mr. Calman, and Mr. Waghorn. The two first do not differ materially ; and as that of the British agent is more extensive and more official, we shall give it the preference, but shall consider it right to draw a few obvious corrections, and to fill a few blanks, from the list of Mr. Calman. It is proper, however, to introduce the list, thus formed, by the remark of this gentleman’s editor, which is applicable to all statistical documents of similar origin :— “The enumeration of killed and wounded is given faithfully by Mr. Calman, beyond doubt ; and he would weigh the testimony offered to him. Still, it is the testimony of Orientals, accustomed to reckon laxly and in round numbers ; and must be considered as, at best, an approximation.”

A LIST OF TOWNS, &c., DESTROYED OR INJURED IN SYRIA BY THE EARTHQUAKE ON THE 1ST OF JAN., 1837.

Districts.	Names of Villages.	Number of Houses destroyed.	Number of Persons Killed.	
Aklin el Tiffa	El Gazi . . . . .	14	7	
	El Tara . . . . .	. . . . .	12	
	Castle of Bilad Skiff . . . . .	. . . . .	600 head of goats killed.	
	Kutus . . . . .	The whole village . . . . .	53	
	Atnan . . . . .	Do. . . . .	33	
	El Salha . . . . .	Do. . . . .	12	
	Benthel Gebhel . . . . .	Do. . . . .	8	
	Miss . . . . .	A part . . . . .	3	
	El Miliash . . . . .	The whole village . . . . .	Unknown.	
	Maroon . . . . .	Do. . . . .	17	
	Hasseun . . . . .	Three-fourths . . . . .	13	
	Ain Nebli . . . . .	The whole village . . . . .	12	
	Zigish . . . . .	One-third . . . . .	8	
	Ambaa . . . . .	Do. . . . .	3	
Shara . . . . .	Eble Sakah . . . . .	The whole village . . . . .	100	
	El Matel . . . . .	Do. . . . .	78	
	Albo . . . . .	Do. . . . .	25	
	Mimis . . . . .	Do. . . . .	5	
	El Heam . . . . .	Do. . . . .	150	
	Caffar . . . . .	Do. . . . .	72	
	El Hurba . . . . .	Do. . . . .	5	
	Debin . . . . .	Do. . . . .	All the inhabitants.	
	Sayora . . . . .	Do. . . . .	50	
	Gish . . . . .	Do. . . . .	235	
Mevigaoun . . . . .	El Raschamar . . . . .	Do. . . . .	40	
	Lubia . . . . .	Do. . . . .	143	
	Rami . . . . .	Do. . . . .	180	
	Renna . . . . .	Do. . . . .	300	
	Ramash . . . . .	Do. . . . .	30	
	Towns.			
	Damascus . . . . .	4 minarets and some houses	7 or 8 killed and wounded.	
	Acre . . . . .	Fortifications . . . . .	Do.	
Sidon . . . . .	Houses greatly injured	7		
Safet . . . . .	Destroyed . . . . .	5025 killed, <sup>a</sup> 405 wounded.		
Tyre . . . . .	Slightly injured . . . . .	12		
Nazareth . . . . .	Do. . . . .	7		
Tiberias . . . . .	Entirely destroyed . . . . .	775 killed <sup>b</sup> 65 wounded.		

<sup>a</sup> 4000 Jews, 25 Christians, 1000 Mohammedans.—Calman.

<sup>b</sup> 500 Jews, 25 Christians, 250 Mohammedans.—Calman.



The following villages, also in the district of Shara, were entirely destroyed, but the number of the inhabitants who perished is unknown ;—Asban, Asbaga, El Atrech, El Shaley ; and the following in the district of Mevigaoun—Topte, El Maga, Giatoun, Darel Hata, El Suma, Sulti, Nadris, Usable, Alme Decta, Mogar, Akin, Atbar, Mahrun, Bira, Darel Wafa, El Maydel. Some of the names in this list appear to be mis-spelled ; and we have only been able to find the means of correcting a few of them to our own satisfaction.

Considering by how many such convulsions as these this land has been desolated, causing the utter extinction of numerous towns and villages, no one can wonder at the difficulty which is felt in ascertaining the old sites mentioned in the Scriptures ; but surprise may rather be experienced at the very considerable number which have been identified.

It is not strictly within our object to dwell upon the human suffering which this calamity produced, and which such visitations have, doubtless, in all ages, occasioned in the same country, otherwise we could occupy many pages with accounts of the few survivors of this dreadful overthrow, appearing like men whom consternation had divested of sound reason, brooding over the ruins of their habitations, and bemoaning the relatives who still lay buried beneath the ruins :—of those at Safet, with ghastly countenances and tattered clothes, scattered over the four sides of their mountain, destitute of raiment and shelter to screen them from the keen mid-winter air of the mountains, and seeming as if they only survived to pine away more slowly and sufferingly than those whom the earthquake had overwhelmed ;—of faithful dogs trying, with indefatigable perseverance, to remove the heaps of stones which hid their owners from their sight, and breaking forth, every now and then, into the most mournful howlings, when they found that the efforts of their weak paws were spent in vain ;—of the dreadful state of many who were wounded, their poor bodies crushed, broken, torn, in every possible way, beyond all hope of cure ; and of the numbers who, in this state, lay upon or about the ruins, with none to care for them or to provide them help or shelter ;—of those who, for the first three or four days, continued alive under the ruins, sending forth bitter cries and lamentations, and vain entreaties for help, the attempts to give which, in many cases, crushing them to death by the displacement of the stones and beams which had given them protection ;—of those who, after many days, were brought forth barely alive, and who opened their eyes once more upon the light of day, and by that light viewing their few surviving friends and their ruined cities, closed them again for ever ;—of the bodies of the slain drawn out and dragged about the fields by greedy dogs, which, emboldened by their horrid fare, became at last dangerous to the living ;—or, finally, of the wild inhabitants of the desert hastening gleefully—like vultures to the scent of blood—to reap the harvests for which they did not labour, and to gather the treasures which they never deposited, digging among the ruins, and bearing joyously to their tents and caverns the wealth of the living and the dead.\*

\* Calman, 3, 5, 6, 8, 9, 15, 18, 27.

## SUPPLEMENTARY NOTES.

(<sup>1</sup>) HOT BATHS OF TIBERIAS, p. lxxi.—This, from Hasselquist, is a moderate estimate of the heat, as compared with that which the old travellers give. Morison, for instance, says, with some simplicity,—“La source . . . est si baiillante, qu'il ne me fût pas possible d'en souffrir pendant quelques momens l'incroyable chaleur. J'essaiai plusieurs fois d'y tenir le bout du doigt pendant le tems nécessaire pour prononcer fort vite ce peu de paroles *Gloria Patri et Filio*, mais je ne pû pas y réussir; et je crois qu'une eau qui auroit bouilli sur un grand feu pendant une heure entière, n'auroit rien de plus insupportable.” (Voyage, p. 205.) He was evidently not aware that water gains no increase of heat by prolonged boiling. Dr. Richardson, having no thermometer, could not ascertain the temperature of the spring; but it was so hot that the hand could not endure it. The water must remain many hours in the cistern of the bath (as Morison says was the case in his time) before it can be used, and even after this the Doctor thinks its temperature not below 100°. Buckingham *did* apply a thermometer to the water at its issue, when the mercury rose instantly to 130°, which was its utmost limit; but the heat of the water was certainly greater. Morison says that, on bathing in the lake, he found its water (which is naturally very cold) quite warm, at the distance of twelve paces from the water's edge, and twenty-five or thirty from the source, by reason of the water allowed to escape from the hot-spring. He agrees with later travellers in describing the taste as a mixed one of salt, sulphur, bitumen, and iron. Poccocke bottled some of the water, and brought it home, when it was found to hold in solution a considerable quantity of “gross fixed vitriol, some alum, and a mineral salt.” The extreme saltiness of the water communicates a brackish taste to that of the lake near it.

This spring has been, from ancient times, celebrated for the medicinal properties of its waters; whence it has been a place of much resort, from all parts of Syria, in rheumatic complaints, and cases of early debility. For the accommodation of the visitors, suitable baths appear to have been erected, which are at present supplied by a small and mean building, with a low dome. The interior is divided into two apartments, the innermost of which, being the bathing-room, has a cistern eight or

nine feet square, sunk below the pavement, for containing the hot water. The spring rises, to supply the cistern, through a small head of some animal. The waters are also taken internally, but not without much precaution, or until due care has been taken to render it drinkable by dilution; for, in its natural state, it is not only extremely hot, but has a stronger mineral flavour than the stomach can endure. Volney informs us that the deposition of the spring is also used medicinally. He says,—“For want of clearing, it is filled with a black mud, which is a genuine *Æthiops Martial*. Persons attacked by rheumatic complaints find great relief, and are frequently cured by baths of this mud.”<sup>a</sup>

(<sup>2</sup>) HOT BATHS AT TAHHBAHH, p. lxxvi.—These baths do not appear to have been noticed or described by any traveller before Buckingham. The following is the further description of them which he gives:—

“The most perfect of these baths is an open, octangular basin, of excellent masonry, stuccoed on the inside, being one hundred and five paces in circumference, and about twenty-five feet in depth. We descended to it by a narrow flight of ten stone steps, which lead to a platform about twelve feet square, and elevated considerably above the bottom of the bath, so that the bathers might go from thence into deeper water below. This large basin is now nearly filled with tall reeds, growing up from the bottom; but its aqueduct, which is still perfect, and arched near the end, carries down a full and rapid stream to turn the mill erected at its further end. On the sides of this aqueduct are seen incrustations, similar to those described on the aqueduct of Tyre, leading from the cisterns of Solomon at Ras-el-ayn, and occasioned, no doubt, by the same cause. The whole of the work, both of the baths and its aqueduct, appears to be Roman; and it is executed with the care and solidity which generally marks the architectural labours of that people.”<sup>b</sup>

(<sup>3</sup>) “ON THE DESTRUCTION OF THE VALE OF SIDDIM,” p. lxxix.—As we do not contend that

<sup>a</sup> Morison, liv. ii. ch. 5; Van Egmont and Heymann, ii. 33; Volney, ii. 193; Buckingham, ii. 340; Richardson, ii. 42; Robinson, ii. 224.

<sup>b</sup> Travels in Palestine, ii. 340.

the Dead Sea is the crater of a volcano, we have no particular object in showing that Chateaubriand's arguments prove nothing in this matter. But although it be true that the greater number of known volcanoes take the form which he describes, it remains to be proved that such a form is essential to them. We know of no facts or arguments to show that a volcano may not exist in a hollow among mountains, and we know that such may exist as a chasm in a plain.<sup>a</sup> The formation of a mountain crater is a work of time,—the result of a continued propulsion of matter through the same vent, whereby, in process of time, such conical masses are formed as the eloquent Frenchman describes. What he says is, therefore, no more than that the effects which he witnessed at the Dead Sea are not such as result from the *continued* operation of volcanic agencies. And in this we quite agree with him. There is much in Scripture, and much in the present state of the tract of country which we are describing, to render it manifest that it has in different parts, and probably at different times, been subject to volcanic disturbances; but that any of them, however violent, were of long continuance, the Scripture precludes us from supposing.

Much of the misunderstanding in this matter results from the assumed necessity (evidently present to the mind of Chateaubriand) of finding a volcano before volcanic manifestations shall be recognized. This is a radical error. In pursuing the inquiry which the present chapter embraces, we have described ourselves as collecting *volcanic indications*, not as looking for the site of a volcano. A district, in which no traces of a crater can be found, may exhibit manifestations of volcanic action; such action having been probably sudden, brief, dispersed, and intermittent. To decide concerning these, by a reference to the appearances produced by the long continuance of volcanic action in the same place, can scarcely be considered correct.

Again, writers, like Chateaubriand in the present instance, speak of volcanoes, and so forth, with reference to some theoretical notions on the subject. Feeling that the true theory of volcanoes has not yet been established, we have abstained from any such reference; and in noticing volcanic indications have intended no more than *indications of the action of fire*. We take this to be the simple meaning of the word "volcanic," apart from all theory; and, as the matter involves some points of delicacy in such a work as the present, we beg that

the acceptance in which we employ the term may be distinctly understood.

The action of fire implies the presence of combustible materials previously to that action; but how these materials ignite, how combustion is produced, is a question which still remains to be *decided*; for although, probably, the true explanation has been *suggested*, the evidence, which may in the end establish it above all other hypotheses, has not yet been produced. We see nothing to disprove that the ignition may, under differing circumstances, be differently produced; and the variety of theories on the subject, all having some very good reasons in their favour, may tend to sanction this conclusion.

Now, in the case of the Dead Sea, we know, from the best possible authority, that the site it occupies was once a fertile and populous plain. It was in those days that "Lot lifted up his eyes and beheld all the plain of Jordan, that it was well watered everywhere before the Lord destroyed Sodom and Gomorrah, even as the garden of the Lord, like the land of Egypt" (Gen. xiii. 10.) We learn immediately after (xiv. 3, 10) that this site was called the "Vale of Siddim," and that it was replete with combustible materials, which were partly exposed in the form of "slime-pits,"—that is of such sources of bitumen as still are found on the eastern borders of the lake, and as, from the products which rise to the surface, appear still to exist below the waters. The sacred history having thus apprised us of the presence of combustible materials, soon after acquaints us with the occasion of their ignition. Provoked by the iniquities of the people who inhabited the plain, "The Lord rained upon Sodom and upon Gomorrah brimstone and fire" from the Lord out of heaven; and he *overthrew* those cities and all the plain, and that which grew upon the ground."<sup>b</sup> Abraham, who witnessed this manifestation of the Divine judgment, which he had vainly endeavoured to avert, "looked towards Sodom and Gomorrah, and toward all the land of the plain, and behold, and lo, *the smoke of the country went up as the smoke of a furnace.*"<sup>c</sup>

The object of the sacred account is to inform us that the Lord did, by his special judgment, *overthrow* the sinful cities of the plain, and not to explain *how* that overthrow was effected. We are told, however, that "the Lord rained burning brimstone out of heaven." Some think that this was an ejection upon the plain of burning matter from a volcanic eruption in the neighbourhood; others, that lightning was

<sup>a</sup> As in that of Kiraunes, in the Sandwich Islands, described in the interesting book of the Rev. W. Ellis.

<sup>b</sup> Gen. xiv. 24, 25.

<sup>b</sup> i. e. burning brimstone.

<sup>c</sup> Gen. xiv. 28.

the agent employed in the ignition of the combustible materials which the plain afforded; while many take the expression to denote the literal projection of fiery matters from the sky upon the plain. We shall not examine these alternatives. The special interposition of Divine providence in bringing down this judgment at the appointed instant, when the iniquities of the inhabitants had ripened them for destruction, would be equally apparent under all. But we submit that, with our previous knowledge of the combustible character of the district, all the intimations which the sacred text affords, are indicative of volcanic action, produced by the fiery agency which the Lord in his chosen time supplied. And it may be well to remind the reader that this appearance of falling fire which occasions so much doubtful explanation and comment, is not singular or unexampled; for it has been seen. in Mr. Calman's account,<sup>a</sup> that a similar appearance attended that combination of volcanic and earth-shaking agencies which produced the terrible result of 1837.

To those who do not balance and compare dispersed texts with sufficient attention, it might seem, at the first glance, that the destruction of "all the plain" was the consequence of its inundation by the "burning brimstone" which the Lord rained out of heaven. But we must recollect that it was not a submersion by a "fiery deluge," but an "overthrow;" and remembering the "slime-pits" which were exposed in the plain, we can see that a combustion must have ensued, which, by its action on subterraneous gases, would explode the whole plain, casting its contents far and wide, and ultimately causing a great depression of its surface. The Scriptural intimations, and all existing appearances, are in favour of this view.

The plain of Siddim is described, in one of the texts we have cited, as part of the plain of the Jordan, that is, that the river flowed through it. It, therefore, follows that the plain had about the same level (gradually sloping southward) as the general plain of the Jordan, of which it was part. But now its bottom is very far below that level; and this must have been the result of a convulsion and submersion of its former surface. Whereas, the ultimate effect of a single deluge of fiery matter would have been to raise the surface of the plain.

Moreover, the sacred narrative, closely examined, indicates a suddenness of effect—an

explosion from sudden ignition—rather than mere submersion by the continuous down-flow of burning matter. It was "early in the morning" when the angels hastened Lot to go forth that he might escape the impending destruction; and it was still "early in the morning" when Abraham looked towards the plain, and saw its smoke ascending like the smoke of a furnace. This intimates that the catastrophe was then over. Had he seen the descending fire, *that* would not have taken his attention. But the fire had fallen—the convulsion had taken place; and the details of the terrible result were hid from his view by the dense smoke which rose from the whole country of the plain as from a furnace. Such a convulsion must have been attended with a fearful noise; and it does not seem unlikely that this noise, together with the shaking of the earth, announced to Abraham that the Lord's purpose was accomplished, and led him to hasten so early in the morning to the place from which a view of the plain might be commanded. We do not see how the nature of this awful event could more clearly be defined than by the collection and comparison of these dispersed intimations.

The explanation which we have suggested is not different, though perhaps more comprehensive, than that which Chateaubriand himself is inclined to embrace as "one which allows the inclusion of physical circumstances without injury to religion." This is the notion of Michaelis and Busching, who hold that Sodom and Gomorrah were built upon a mine of bitumen, and that the combustible matters having been enkindled by lightning, the cities sank down in the subterraneous conflagration. We, of course, do not object to this explanation, which is substantially the same which we have given; but we do wonder that, admitting so much of "*la physique*" into the consideration, he should have thought it worth his while to contend against volcanic combustion and volcanic appearances; for, as we have used and understand the word, the convulsion, in the form he allows it to have taken place, would have been volcanic, and the resulting appearances, which we might at this day expect to find in the neighbourhood, would be such as amply to justify, if not to require, its being described as a volcanic region.<sup>a</sup>

<sup>a</sup> Indeed the Neptunians would hold the event to have been volcanic in the strictest scientific sense of the word; for they hold that volcanoes are owing to the inflammation of beds of coal or other combustible matter, and regard them as local or of very limited range. We point out the conformity, without wishing to declare our adherence to the Neptunian or any other geological theory. Our present inquiry does not need any theoretical elucidation.

<sup>d</sup> Page xcii. of this chapter.

The other volcanic appearances about the Lake of Tiberias and in the Eastern country are not accounted for or noticed in the sacred books. It is very possible that the combustion which turned the fertile plain of Siddim into an asphaltic lake was subterraneously propagated, and burst forth in other and distant places; and that they were all thus connected with the same great event which the sacred history records. But they may have been produced, independently, at an earlier or later date; and, if so, we should not expect them to be noticed in Scripture unless they were connected with some *extraordinary* exhibition of Divine power, and intended for the punishment of a guilty people. Its silence would imply that they were not. It is, however, possible that such events may be alluded to by the prophets; although, from the want of historical information on the subject, we may be unable to fix this precise meaning to the texts in which such allusions occur.

(\*) SZAFFA, p. lxxxiii.—It may be well to introduce here the whole of the information which we at present possess concerning this district.—“The Szaffa is a stony district, much resembling the Ledja, with this difference, that the rocks with which it is covered are considerably larger, although the whole may be said to be even ground. It is two or three days in circumference, and is the place of refuge of the Arabs who fly from the pasha’s troops or from the enemies in the desert. The Szaffa has no springs: the rain water is collected in cisterns. The only entrance is through a narrow pass, called Bab el Szaffa, a cleft between high perpendicular rocks, which none ever dared to enter as an enemy. On its western side this district is *El Harra*, a term applied by the Arabs to all tracts which are covered with small stones; being derived from *Harr*, i. e. heat (reflected from the ground).”

\* Burckhardt’s Syria, p. 92, note.

## CHAPTER V.

### VALLEYS, PLAINS, AND DESERTS.



[Plain of Jericho.]

IT has already been shown that the general direction of the great mountain-chains of Syria is from north to south, that being the direction in which the country is most extended. It therefore follows that the great principal valleys, or basins, which separate or run parallel to these mountains, take the same direction. The lateral valleys, which separate the arms or branches of the mountain-chains, and through which their waters pass into the parallel basins, for the most part make a great angle—generally a right angle—with them, and, consequently, have a general direction from east to west, or from west to east.

We have written of the great mountain-chain of Lebanon, and have described its southward prolongation as extending through and dividing the length of Palestine, the backbone of which, so to speak, it forms. Now, the parallel valley or basin of this great central chain, on the *west*, to which all the lateral valleys and all the streams of its western slope tend, is formed by the low lands on the coast facing the Mediterranean. But the great parallel valley on the *east* is formed, first, by the Bekka or valley between Lebanon and Anti-Lebanon; then by the bed of the river Jordan and its lakes; and, lastly, by the great valley of Araba, which extends from the Dead Sea to the Elanitic Gulf. In this great and extensive basin all the valleys which separate the eastern branches of the great central chain terminate, and through them it receives all the waters which fall from its eastern slopes. This valley is the eastern frontier

of Palestine Proper ; but, taking into account the country beyond it eastward, which we include in our survey, it becomes a central basin, towards which are directed, westward, the valleys and streams of the eastern mountains and high plains. This is, therefore, of more importance, geographically, than even the other principal valley—if it be right to call it a valley—which stretches along the coast ; seeing that the lateral valleys of two principal chains are directed towards it, whereas the valleys and streams of only one slope tend towards the coast.

This being the system of the valleys of Palestine, the obvious course before us is, first to trace the characteristics of the coast from the north to the south, and then those of the great central valley ; after which we shall be in condition to attend to such of the lateral or subsidiary valleys as require especial notice : and may then conclude with a notice of the plains and deserts of the east and south.

The extent of the line of coast which we shall now follow is from Antaradus (*Tartous*) to the southernmost border of Palestine ; reaching, therefore, through about four degrees of latitude ( $31^{\circ}$  to  $35^{\circ}$ ).

Viewed generally, the tract of country through this extent, varies considerably in its breadth between the margin of the sea and the lower undulations of the central mountains. In some parts it expands into wide plains, in others it is contracted into narrow valleys, and there are places where the mountain-branches sent forth westward, break the continuity of the plain, and stretch forth even into the sea, forming the promontories along the coast. On the other hand, the plain is in some parts indented by bays, which are, however, broad rather than deep, and which nowhere occur to the south of the promontory of Carmel. Most of the smaller indentations of the coast appear to have been worn by the action of the streams where they discharge themselves into the sea.

Throughout this extent the soil, with the exception of some sandy tracts, is surpassingly productive. It is, for the most part, as in most of the fertile parts of Syria, composed of a rich brown garden-mould ; although in its northern part there are indications of that red soil which prevails in the extreme north and north-eastern parts of Syria. The climate all along the coast is very warm, and rather insalubrious as compared with the more elevated parts of the country.<sup>a</sup>

After this general statement we may take our journey along the coast, noting such particulars as seem to deserve attention. Our first stage shall be from Tartous to Tripoli, thirty-five miles, through the country of the Arvadites, the Zemarites, and the Arkites ; and Maundrell, Shaw, and Burckhardt shall be our guides.

On the land-side, a spacious and pleasant plain extends around Tartous. Travelling from thence, we soon cross the river Marathus, and without stopping to examine the curious antiquities near the Serpent's Fountain, proceed five miles further, where our attention is arrested by some very ancient and very remarkable sepulchral constructions, in the shape of conical pillars, which might bring to mind "the pillar of Rachel's grave" more markedly than the domed structure which now forms her monument.<sup>b</sup> Shaw says, "the situation of the country round about them has something in it so extravagant and so peculiar to itself, that it can never fail to contribute an agreeable mixture of melancholy and delight to all who pass through it. The uncommon contrast and disposition of woods and sepulchres, rocks and grottoes ; the medley of sounds and echoes from birds and beasts, cascades and waterfalls ; the distant roaring of the sea, and the composed solemnity of the whole place, very naturally remind us of those beautiful descriptions which the ancient poets have left us of the groves and retreats of their rural deities."<sup>c</sup>

A little to the south of this spot commences a great plain, to which the people of the country give the name of Jeune, or the Plain, by way of eminency, on account of its great extent. Its length almost reaches to the Cold River,<sup>d</sup> while its breadth between the sea and the mountains varies from five to seven leagues. All over this plain are dispersed a great number of castles and watch-towers, erected perhaps as well for the safety and security of those who cultivated

<sup>a</sup> Taylor et Raybaud, 'La Syrie,' 188, 190.

<sup>c</sup> Maundrell, 20, 21 ; Shaw, ii. 16, 21, 22.

<sup>b</sup> See the cut, p. 103.

<sup>d</sup> Nahar el Bergd.

it, as to observe the motions of whatever enemy should at any time pitch on it for a seat of action. Such towers are of frequent occurrence in other parts of Syria, and may be the same with the "watch-towers," in contradistinction to the "fenced cities," as they are mentioned in the Scriptures. A representation of one of them has already been given in this work.<sup>a</sup> Besides these towers, the Jeune offers several large hillocks of the same figure, and probably raised upon the same occasion with those eminences which we call *burrows* in England. Such monuments occur most frequently on battle-fields; and, certainly, no place can be better supplied with water and herbage, and, consequently, more proper either for a field of battle or where an army could be more conveniently encamped. Three rivers<sup>b</sup> pass through this plain, crossed by bridges of stone.<sup>c</sup>

The Nahar el Bered may be taken as the boundary of this plain southward. Here the eastern mountains, which had been gradually approaching the shore, begin to run parallel to it, at the average distance of a mile; but sometimes stretching out into the sea in small promontories. This is the first near approach of the Lebanon mountains to the shore, by which a remarkable alteration is made in the aspect and disposition of the whole country. The town of Tripoli,<sup>d</sup> situated upon the declivity of a hill facing the sea, lies about six miles to the south of this river; and thus our first stage is completed.<sup>e</sup>

Our next shall be from Tripoli to Beirout, fifty-eight miles.<sup>f</sup> Through all this extent, the coast appears to be formed of sand, accumulated by the prevailing westerly winds and hardened into rocks. The valley between the mountains and the sea is, in all this distance, very narrow. The average breadth may be one mile; in very few places does it exceed two miles; and in some parts the mountains run close along the shore, so as to leave only a road between them and the sea. Of the mountain-ridges which throw their extremities towards the sea, the first which conspicuously breaks the continuity of the vale, and forms a marked promontory,<sup>g</sup> is that which terminates in the Ras el Shakkah, which stretches into the sea more than two miles beyond the general line of the coast, and the ascent *over* which, through a deep and rugged pass, is a work of time and difficulty. In the angle of the coast beyond this is the small town of Batroun (the ancient *Bostrys*), at the foot of the hills, which for some miles further slope quite down to the shore. On crossing the bridge over the winter-torrent of Medfoun, by which we leave the Batroun district, the valley opens a little, and gradually widens as we approach the walled town of Jebail.<sup>h</sup> Leaving this, the plain, though still narrow, continues to widen slightly. In one place a pleasant grove of oaks skirts the road; and in another we cross a natural bridge, worn by the waters over the bed of a winter-torrent. The river Adonis, so famed in classic fable, also occurs, under the name of Nahar Ibrahim, before we arrive at the northern promontory of the bay of Kesraoun, which again narrows and obstructs the vale. When this promontory has been passed, and we stand on the borders of the bay, the country offers a most interesting aspect. On the one hand are steep and lofty mountains, full of villages and convents built on their rocky sides; and, on the other, the fine bay, with a plain of about a mile in breadth between it and the mountains. This plain is of a sandy soil, but is sown with wheat and barley, and irrigated by water drawn from wells by means of wheels. On approaching the southern promontory of this extensive bay, the country rises and continues hilly with slight interruption for some five miles, in the course of which we pass the Nahar el Kelb<sup>i</sup> by a stone bridge, about ten minutes' walk above its junction with the sea. From the bridge the road continues along the foot of the steep rocks, except where they overhang the sea, and there it has been cut through the rock by the Romans for about a

<sup>a</sup> Page 103.

<sup>b</sup> Maundrell makes them four; but he extends the plain nearly to Tripoli. The three are the *Nahar el Kebir*, or the Great River; *Nahar Abrosh*, or the Leper's River; and *Nahar Akkar*: the fourth, which Maundrell includes among the rivers of the plain, and Shaw does not, is the *Nahar el Bered*, or the Cold River.

<sup>c</sup> Maundrell, 24; Shaw, 22, 23; Burckhardt, 160—163.

<sup>d</sup> Called *Tarabolos* by the natives.

<sup>e</sup> Shaw, ii. 27—29.

<sup>f</sup> Direct distances are always given; and English statute miles are to be understood, unless geographical miles are specified.

<sup>g</sup> The *Theo Prostron Promontorium* of the ancients.

<sup>h</sup> The ancient *Byblus*. Originally this appears to have been the seat of the Giblites mentioned in Josh. xiii. 5; 1 Kings v. 18; Ezek. xxvii. 9.

<sup>i</sup> Dog River, the ancient *Liyous*.



mile. On clearing this pass we reach a smooth sandy shore, which soon conducts us to the triangular point of land, towards the western extremity of which the town of Beirout<sup>a</sup> stands. This point projects into the sea about four miles beyond the line of coast, and there is about the same distance in following that line across the base of the triangle.<sup>b</sup>

Our next stage shall be one of forty-six miles, from Beirout to Tyre.

Leaving the thriving and important town of Beirout, we cross the root of the tongue of land on which it stands, through cool and pleasant lanes, hedged on both sides with sloping walls of earth crowned with the prickly pear. It takes nearly an hour to clear these, and then we enter upon a sandy tract, occupying the south-western side and angle of this tongue of land, and where the sand has been blown up into low hills, between the road and the shore, by the prevailing westerly winds. The lower hills of Lebanon, on the east, here present a bold and interesting appearance, with a number of villages and detached buildings, and every sign of industrious cultivation. The plain below them is full of olive-trees and lighter verdure; and here a fine grove of pines, planted by the famous Emir Fekhr-ed-Dein, still subsists. The sandy plain is continued for several miles in a gradual descent to the beach; and on leaving it we enter upon a fine plain, about six miles long by four in breadth, which is or was richly set with gardens and orchards even to the base of the eastern hills.

This plain terminates at the river Damoor, the ancient Tamyras. On the other side of that river the eastern mountains approach nearer to the shore, leaving only a narrow, rocky way between; and so, for the most part, it continues to the town of Seide (the ancient Sidon), the road now lying along the sandy beach of the sea-shore, and then over rocky paths at a little distance from it. The Nahar el Aoula, which supplies Seide with water, is crossed within a league of that town, on approaching which the valley widens and improves, so that the plain immediately behind it is about two miles wide, and is entirely laid out in extensive and shady groves and gardens with narrow lanes between them. The hills which bound the plain on the east are also fruitful and picturesque; and, upon the whole, this is a very pleasing portion of the line under our survey.

Continuing our journey from Sidon to Tyre,<sup>c</sup> we find the plain gradually narrows. The scenery for most of the way is remarkably simple. On the right hand is the sea; on the left a low, modest line of mountains, the flat intervening plain varying in breadth from 150 to 300 yards. This thinly-peopled and nearly barren tract of country offers little to excite interest, save the ruins—now mere heaps of rubbish—of several large towns, which bring to mind how populous and rich this part of the Phœnician territory once was.

After passing the picturesque Kasmia, the plain becomes more wide; and when we arrive at Tyre, which is not more than a league beyond, it has become between four and five miles wide, backed by hills much higher than those which bound the plain of Sidon. The country has, however, here an air of wildness and desolation; the soil, though not naturally bad, is much injured by negligent tillage, and the total absence of pasture and woodland leaves the surface in all its naked deformity.<sup>d</sup>

Our next stage along the coast shall be a short one of thirty-six miles,<sup>e</sup> from Tyre to Mount Carmel.

From the base of the isthmus of Tyre, the southward road traverses part of a fertile plain of considerable extent, and in three-quarters of an hour brings us to the beautiful stream and meadows of Ras el Ain, at which spot most travellers pause to examine the cisterns, which the natives, without the least probability, attribute to Solomon, as they do every remarkable work of which they know not the origin. The best descriptions of them are those supplied by Morison, Nau, and Maundrell. From this place the pure waters were conducted to Tyre by a noble

<sup>a</sup> The ancient *Berytus*. We shall have future occasions of noticing this and most of the other towns we have named.

<sup>b</sup> The above account of the coast between Tripoli and Beirout is collected from D'Arvieux, Maundrell, Pococke, Burckhardt, and Irby and Mangles.

<sup>c</sup> Now *Soor*, which is just the same as the ancient Hebrew name of Tyre.

<sup>d</sup> The authorities for the above account of the coast from Beirout to Tyre are:—D'Arvieux, ii. c. 22; Maundrell, 43—48; Pococke, part i. c. 20; Buckingham, 'Arab Tribes,' c. 21; Irby and Mangles, 194—202; Joliffe, 'Letters from Palestine,' 5—15; Jowett, 'Syria and the Holy Land,' 124—131.

<sup>e</sup> The road distance is, however, much greater in this instance.

aqueduct, which still exists as a venerable ruin. The eastern mountains are here about a league distant from the shore. This plain continues somewhat narrowing its breadth as we approach the White Cape,<sup>a</sup> a sublime and picturesque mountain, composed of a calcareous stone as white as chalk. The road over it is occasionally cut through the rock along its side, and is about two yards broad. On the right of this road the rock is covered with bushes, while the left offers a perpendicular precipice to the sea, the scene from which, when the sea rages, is tremendous. This pass is about a mile and a half in length, and has been compared to some of the roads in North Wales. It is perfectly safe, being walled in where necessary. The traditions of the country ascribe this road to Alexander the Great. Having crossed this promontory, we pass for about two hours over a rocky district, and then arrive at the steep and rugged promontory which forms the Cape of Nakhoora, over which the road passes. The ascent of this road, winding over the rugged front of this promontory, reminded Mr. Buckingham very forcibly of similar scenes in Spanish mountains, as well as on the western shores of Portugal: and, here and there, striking resemblances were found to the rocky and sea-beaten shores of Cornwall and Devonshire. On reaching the summit of this promontory, an extensive and beautiful view across the whole plain of Acre opens on us. The elegant and lofty minaret of the city appears at the distance of seven or eight miles directly before us; in the back-ground, far off, twice as distant as the city, is a noble scene;—Mount Carmel dipping its feet in the Western Sea, and, to the east, running considerably inland, entirely locking up from our view the plain of Sharon, which, we know, lies beyond it on the south. In the horizon, on the left, the eye rests on the milder mountain scenery which lies on the road to Nazareth. This plain, from the boundaries thus given, is about fifteen miles in length from north to south, and about five in general breadth from the sea-shore to the hills which border it on the east. The soil of this plain resembles the dark loam of Egypt. It is naturally rich, and, in the season, offers a most exuberant natural cultivation, but it is now almost entirely uncultivated. Over an extent of several miles we may perhaps see a solitary Arab turning up what, on the great plain, appeared to be only a few yards of ground. This is natural, for since, from the extortions of the government, the cultivator cannot enjoy the fruits of his own labour, hundreds choose rather to drag out a half-starved existence within the walls of Acre than to cultivate the rich plain which lies open to any one who might desire to till it. We stop not at the towns of Zib<sup>b</sup> or Acre, which are situated close to the shore, nor do we pause to drink from the "Fountain of the Blessed Virgin," but, crossing the rivers Belus<sup>c</sup> and Kishon, arrive at the termination of the plain under Carmel.<sup>d</sup>

Our fifth stage shall reach from Mount Carmel to Joppa, fifty-six miles.

It will be remembered that the Mount Carmel is formed by a range of hills coming from the plain of Esdraelon, and ending in the promontory or cape which forms the Bay of Acre. The road, at least that usually taken, winds round the foot of this promontory, and, after having turned its point, we continue our way southward along the sea-coast. The plain here, between the foot of Carmel and the sea, is covered with brushwood, much frequented by various wild animals, particularly boars. In less than a league we reach a cultivated plain, and, after crossing that, pass behind a long range of low sandhills, which show rocky fragments in several parts. These shut out the view of the sea from the road; but it is practicable to travel on the other side of them, along the shore. But, if we journey behind them, we ultimately turn out to the shore through a pass cut in these hills through the bed of rock. This pass is called Waad-el-Ajal, the Vale of Death.<sup>e</sup> It is short, and appears to have been once closed by a gate. It is just

<sup>a</sup> Called *Ras el Abaid* by the natives, classically *Album Promontorium*, and by Europeans *Capo Bianco*.

<sup>b</sup> *Achshib* of the Bible; classically *Ecdippa*.

<sup>c</sup> Now *Kardana*.

<sup>d</sup> The authorities consulted for this account of the country between Tyre and Mount Carmel are:—Morison, liv. ii. c. 35; Nau, liv. iii. c. 23; Maundrell, 50—54; Brown, 370, 371; Buckingham, 'Palestine,' c. iii.; Irby and Mangles, 194—198; Jowett, 'Syria and the Holy Land,' 142—144; Stephens, ii. 342, 353.

<sup>e</sup> This may bring to mind the "valley of the shadow of death" of David. Such names are not uncommonly given to gloomy or dangerous vales.

broad enough for the passage of a wheeled carriage or a laden camel, with causeways on each side, hewn down on the rock, for foot-passengers. The length of this pass may be about a hundred yards. Beyond it a narrow, sandy flat extends to the sea. Now, turning southward again, along the western side of the bed of rock through which this pass has been cut, numerous square chambers are seen hewn in the stone. These chambers are small and low, with benches of stone and sometimes concave recesses inside, and cisterns for water near. In particular parts, little flights of steps are provided, leading from one of these caverns to another. These were doubtless intended for habitations; and, as they bear marks of high antiquity, it is not impossible that, as Mr. Buckingham conjectures, they may be counted among those "strongholds near the sea," from which the Hebrews were unable to dislodge the Canaanites.

We travel for two hours along these hills and then leave them through a wide pass, and enter on a wide plain, which we traverse, passing by the small village of Tortura,<sup>a</sup> until we reach the ruins of Cæsarea, the capital of the Herods, so often mentioned in the history of the New Testament. The whole plain is, in this part, a sandy desert now; and no human being lives within many miles of the once rich and busy city. Leaving this spot for the present, we continue our way along the shore, chiefly on a sandy beach, with here and there beds of rock towards the sea. Mr. Mouro travelled along this beach for two hours, and then, turning up into the plain, found that he had entered the celebrated plain which he describes as "the rich pasture-land of the VALLEY OF SHARON, clothed with fresh verdure as far as the eye can reach. The white clover springs spontaneously, and among a variety of shrubs and flowers were a few dwarf tulips. I observed nothing bearing the appearance of what we call a rose, and unless 'the rose of Sharon' is the *Cistus roseus* of Linnaeus, which grows abundantly, I know not what it may be. This tract of land, glorious as it is to the eye, is yet deficient of water in its central part, and for this reason appears not to be frequented even by the Arabs: I traversed it for hours without noticing a single tent.<sup>b</sup> The grass and the flowers spring to waste their sweetness and to fall unseen; and the storks, striding to and fro, are the only animals by which they are visited. The soil is light and the surface elastic; and the uneven foreground swells into hills to the east, which are backed by the mountains of Samaria beyond." This was in spring. To Buckingham, who passed this tract in the depth of winter, it appeared a desert.

In proceeding southward over the plains, which formed, with this, the land of Sharon, various interesting changes are exhibited to our view. As we advance, the pasture-land becomes bordered by a sandy tract, which extends a considerable distance into the grass-land, above which it is elevated about thirteen feet in some places. It has the appearance of an almost perpendicular embankment, to the very foot of which the grass grows luxuriantly. A considerable number of low shrubs grow upon the sand. To this succeeds a cultivated plain, passing from which, by crossing a valley which runs eastward, we reach another more extensive and beautiful plain, covered with trees and with a carpet of richer verdure than is often seen in Palestine. In this wooded country was situated the town of Sharon, which appears to have given its name to the fine plains which we are describing, and which extend from Cæsarea to Joppa, and from the shore to the hills of Samaria. From this central place, far around, the plains are more extensive, more beautiful, and, to all appearance, more fertile than those of Acre, of Zebulon, and of Carmel. But it should be noted that, as for some time after leaving Cæsarea, so for some time before approaching Jaffa,<sup>c</sup> the plains are more bare and desert than in the intervening districts. The wooded country which we have mentioned is succeeded by pasture-grounds, such as have been already noticed: but about eleven miles before we reach Jaffa the hills stretch out towards the coast; and a narrow pass through them conducts to an elevated plain, a consider-

<sup>a</sup> Probably the scriptural Dor, the Dora of Josephus.

<sup>b</sup> A mere accident; the tract is frequented by Bedouins, though none happened to be there at the time.

<sup>c</sup> Or, more properly, Yaffa; which is just the old Hebrew name. This is the Joppa of the New Testament.

able part of which is under cultivation. From this the road descends to the beach, and proceeds under brown cliffs and hills till, finally, we pass over a desert soil to reach the gates of Jaffa.<sup>a</sup>

The whole distance between Jaffa and El Arish, on "the river of Egypt," may be despatched in one long stage, of nearly a hundred miles, through the land of the Philistines. In the part which lies between Jaffa and Gaza, the eastern hills approach nearer than in the plains of Sharon. But these hills, although connected by ramifications with the central mountains, have wide plains and valleys behind them, and the hilly country of Judea.

It may also be observed that throughout and beyond this extent, though not all the way to El Arish, the plains between the mountains and the sea are less level than they have been, the surface being, for the most part, composed of low undulating hills.

Thus, after we passed through the fine gardens of Jaffa, which extend for a considerable distance in the direction of our road, and which are fenced with hedges of the prickly pear, and abundantly furnished with pomegranate, orange, fig-trees, and water-melons, we find the surface of the ground beautifully undulating. The hills are rather high and partially cultivated; but, upon the whole, the plantations of thistles, which abound throughout this country, are quite as numerous as the fields of grain. About Ashdod, eighteen miles from Joppa, the still undulating ground is covered with rich pastures. The description given by Sandys, which is still applicable, applies to the tract between Ashdod and Gaza:—"The champion betweene about twenty miles, full of flowerie hills ascending leasurely, and not much surmounting their rancker vallies, with groves of olives and other fruites dispersedly adorned. Yet is this wealthy bottom (as are all the rest), for the most part, uninhabited, but onely for a few small and contemptible villages, possessed by barbarous Moores (Arabs), who till no more than will serve to feed them; the grass waist high, unmowed, uneaten, and uselessly withering." As he observes, the country is bare of trees; but when the growth of spring comes, the undulating hills, everything looks fresh and beautiful. "It is not," says Richardson, "like the land of Egypt, but a thousand times more interesting." Askelon is nearly midway in our route between these two places, and the vale in which it lies is peculiarly rich and beautiful. In the spring it is enamelled with flowers, among which our garden-pink assumes the place of daisies. On approaching Gaza, the eye, which has not lately seen much of trees, is charmed by the abundant sycamores and the plantations of old and large olive-trees which surround that interesting spot.

Beyond Gaza the mountains are far inland, though visible in the distance; but the undulation of the ground over which we pass continues. The country as far as Khan Younes, or even Rafah,<sup>b</sup> continues to present the same kind of rural scenery as before,—beautiful undulating fields covered with flocks and herds, and crops of wheat, barley, lentils, and tobacco. Speaking generally of the country which we have thus far traversed, Ali Bey says, "All the country of Palestine<sup>c</sup> which I saw from Khan Younes to Jaffa is beautiful. It is composed of undulating hills of a rich soil, similar to that of the Nile, and is covered with the richest and finest vegetation. But there is not a single river in all the district; there is not even a spring. All the torrents I crossed were dry,<sup>d</sup> and the inhabitants have no other water to drink than that which they collect in the rainy season, nor any other means of irrigation than rain-water and that of the wells, which indeed is very good."

At some distance beyond Rafah the crops get thin and poor, although the general aspect of the country remains the same. But after we have passed the village of Sheikh Juide, three hours beyond Rafah, a perceptible struggle commences between the sand and the grass, or sand and cultivation. The sand gradually gains the superiority during the twenty or twenty-one miles we have still to pass before we reach El Arish, which is seated upon a hill in the midst

<sup>a</sup> The particulars embodied in this account of the coast from Carmel to Jaffa are derived from Buckingham, c. vi.; Monro, i. 60—91; Pococke, i. 15; Nau, liv. i. c. 5; Morison, 544; but chiefly from the two first. Few travellers have tracked the whole way from Carmel to Jaffa; but many have crossed and described the plain of Sharon.

<sup>b</sup> Classically *Raphia*.

<sup>c</sup> The reader scarcely need be reminded that the district we are now travelling, since Jaffa, is the original *Palestine*, the land of the Philistines, which gave its name to the whole country.

<sup>d</sup> This was about the middle of July.

of drifting sands ; and although cultivation struggles to that point, it is discontinued beyond it, and from thence to the borders of the Nile we have only the naked desert of shifting sand, which forms a marked barrier in this direction between Palestine and Egypt. Here, therefore, we shall stop.<sup>a</sup>

Thus by taking up one set of travellers where another failed, we have been enabled to give such an account of the whole seaward plain as will suffice for the purposes of this work. In now proceeding to the great interior valley, we shall not be able to realize the same advantage. It has been *crossed* by different travellers in various parts, and portions of its length have been traversed, but a very considerable part of its whole extent remains unexplored ; it may, nevertheless, be possible, by comparing and combining the observations made at different points, to obtain some tolerably clear notions of the whole.

Our first attention is, of course, required by the great valley or enclosed plain, which separates the parallel ranges of Libanus and Anti-Libanus. This vale extends above ninety miles



[Baalbec.]

in length, from north to south, and may average about eleven miles in breadth. Its breadth is unusually equal. The widest part is towards the northern extremity, and the narrowest towards the southern. This was the Cœle-Syria or Hollow Syria of the ancients, and now bears the name of El Bekaah,<sup>b</sup> or "the Valley," by way of eminence. This valley, by collecting the waters from the mountains on either hand, is abundantly watered by rivulets ; almost every village has its spring, all of which descend into the valley, and either lose themselves or join the Liettani (the ancient Leontes), the source of which is between the towns of Zahle and Baalbec, about two hours from the latter place, near a hill called Tel Hushben. The soil is

<sup>a</sup> Our guides through the land of the Philistines have been, Richardson, Mangles [these alone traversed its whole extent], Sandys, and Ali Bey : Zuallert, D'Arvioux, and Roger [whose account has been copied by Surius], have also been consulted ; but the route along the coast from Jaffa, southward, was not much frequented by the older travellers. Dapper, in his "Syrie en Palestyn," has a very full account of the land of the Philistines (pp. 211—229), historical and geographical, comprising, perhaps, all the information which existed prior to the eighteenth century.

<sup>b</sup> The word means a valley or low plain in Hebrew, Syriac, and Arabic, and is expressly applied in the Scriptures to this very valley. See Josh. xi. 17 ; xii. 7 ; and Ezek. xxxvii. 1, 2, where the words rendered, very properly, "the valley of Lebanon," are literally "the Bekaah of Lebanon." The northern part, in which Baalbec is situated, is called, distinctively, Belad (district, province) Baalbec ; but El Bekaah applies to the *whole* valley, although it is more frequently heard with reference to the southern half, which has no distinctive name. This led Burckhardt into what we conceive to be the error of supposing the name El Bekaah was confined to that portion, and to divide it into two parts, El Bekaah and Belad Baalbec. La Roque and Volney, who both resided long in Lebanon, consider the first of these names to comprehend the whole extent of the valley.

very fertile; and as the mountains concentrate the rays of the sun, a heat in summer is produced scarcely inferior to that of Egypt. Such a combination of water, warmth, and a good soil, produces exuberant fertility everywhere in the East. It does so in the Bekaah, which is hence naturally, perhaps, the most rich and beautiful part of Syria. In La Roque's time the natural beauty and agreeableness of this vale, together with the extensive cultivation and the numerous villages and plantations, rendered it fully comparable to the far-renowned plain of Damascus. But the terrible earthquake of 1759, joined to the subsequent wars with the Turks, brought almost everything to ruin and neglect. But still, even so late as the beginning of this century, the plain and a part of the mountain to the distance of a league and a half around the town of Baalbec were covered with grape plantations: but the oppressions of the governors and their satellites have now entirely destroyed them; and the inhabitants of that place, instead of eating their own grapes, which were renowned for their superior flavour, are obliged to import such as they need from the mountains. The southern part of the vale is now better cultivated than the northern; but even there five-sixths of the soil is left in pasture to the Arabs. The usual produce of the harvest in the vale is ten-fold; but in very good years it is often twenty-fold. Walnut-trees abound, particularly in the more northerly part of the vale, as do also mulberry-trees. The climate is particularly suited for vines; and the vale formerly and does still to some extent produce those fine and very superior raisins which were exported in all directions under the name of "raisins of Damascus."

Volney says that, notwithstanding the heat of this valley, its air is not at all unhealthy, giving as a proof that the inhabitants sleep without injury upon their house-tops. This salubrity he attributes to the fact that the waters never stagnate, and that the air is perpetually renewed by the north wind. But Burckhardt says, on the contrary, that the air of the valley is far from being healthy. "The chain of Libanus interrupts the course of the westerly winds, which are regular in Syria during the summer months; and the want of these winds renders the climate extremely hot and oppressive." Considering the reputation of the valley, we incline to think that Volney is most probably in the right. Burckhardt was a mountaineer—a Swiss,—and men are apt to judge from their own impressions without reference to facts. A climate may be oppressively hot, and yet not unwholesome to the natives. The plain of Irak Arabi is far warmer than any part of Syria, and yet a healthier country would be very difficult to find.<sup>a</sup>

The valley of the Jordan is, of course, the space between the hills on each side of the river and its lakes, without regard to the immediate *bed* of these waters, which will more properly be noticed in the chapter on Lakes and Rivers. Viewing this from above the sources of the Jordan to the end of the Dead Sea, the extent is not under 175 miles. The breadth varies much; in some places it is very inconsiderable, and in others widens into extensive plains. "This valley, through its whole course, is bounded by a chain of mountains on each side. On the *east* they rise almost precipitously from the bed of the river; but on the west there is a fine fertile vale, averaging about half or three-quarters of a mile broad, between the river and the mountain. This does not apply to the lake of Gennesareth; for there the mountains are close to the lake on each side, with here and there a small beautiful vale opening on the west. The mountains on the east are bolder, and continue with little interruption all the way. On the west side the interruptions are frequent, and charming defiles, irrigated by small streams of water, pass off." This statement is from Dr. Richardson, who tracked more of the course of this valley than any other single traveller; and, in explanation of one point, it is only necessary to remind the reader of our previous statement, that the bolder eminences on the eastern side of the valley are, to a great extent, cliffs, behind which there are not proportional descents, but higher levels, than those which the western side of the valley offers. We have also had occasion to state that the valley itself offers the lowest level in all Syria, that level being the lowest of all in the southern parts. Some idea of this most extraordinary depression of the valley may be formed from the facts that while Jerusalem, on the western mountains, is 2600

<sup>a</sup> This account of the great valley of Lebanon has been drawn up chiefly from the brief particulars afforded by La Roque, Volney, Burckhardt, and Elliot. Dandini has nothing of any value on the subject.

feet, and Jerash, on the eastern plain, is 2000 feet *above* the level of the Mediterranean,<sup>a</sup> the plain of Jericho, at Rihhah, is 700 feet, and the Jordan itself, before it reaches the Dead Sea, is 1269 feet *below* the same level.<sup>b</sup> The consequence of this is a degree of heat in the valley comparable to that of the valley of the Nile; which, with the presence of water, exhibits the usual effect in the most exuberant fertility, under proper treatment, with a profuse manifestation of vegetable products which, out of the valley, can only be found in a more southern latitude. Here, also, the seasons are more advanced than in the more elevated tracts of country on either hand; so that, upon the whole, the vale of the Jordan may be regarded as a zone of almost tropical country extending through what may be called a temperate climate.

As we consider that the valley of the Jordan may take its commencement from the angle formed by the divergence of Jebel Essheikh from the main chain of Anti-Libanus, we shall there commence the rapid survey of it we now purpose to take.

The commencing valley thus formed seems to be called Wady Ityne,<sup>c</sup> though it also bears the name of its principal town, Hasbeya. This vale has a general direction N.N.E. and S.S.W., and varies in breadth from two to three miles. Its level is often interrupted by small hillocks, but it is well cultivated throughout with corn, vines, and olives, and is full of villages, peopled wholly by Druses and Christians in nearly equal numbers. They rear silkworms on a very extensive scale, and for their sake the mulberry-tree is largely cultivated.

At the end of this valley the mountains approach each other, having only a narrow passage for the stream from Hasbeya. They then diverge again, and stretch wide apart, to form what is usually considered the commencement of the Jordan valley; but which, geographically, had better be regarded as the basin and plain of the lake Houle. The plain, without the lake of that name, is from nine to twelve miles in breadth, by about twenty in length. This beautiful plain, enclosed by high mountains, and backed in one direction by the snowy heights of Hermon (Jebel Essheikh) is watered by the river of Hasbeya and the Jordan, as also by several rivulets which descend from the mountains. The soil is most fertile. It is covered everywhere with the richest pastures, to which some Arab tribes and the Toorkmans bring their cattle. Only a very small part is under cultivation; and the crops of wheat and barley here, as in other parts of the Jordan valley, are the finest which can anywhere be seen. Thistles abound here, as on the coast; and so tall and gigantic are they as to annoy those who ride through the plain, as they reach to the saddles of the horses. The hills around are to a very considerable extent covered with oaks.<sup>d</sup>

Beyond this plain, southward, the hills approach, or rather the western hills incline towards, the eastern cliffs, having a comparatively narrow valley or plain to connect the basin of Lake Houle with that of the Lake of Gennesareth. This is a fine undulating plain, amply covered with weeds and thistles; but with a soil capable of any species of cultivation.

The mountains open again as we draw near the great lake of Gennesareth; but the basin thus formed is little more than sufficient for its waters, so that a narrow vale between their brink and the foot of the enclosing mountains is all the space afforded. The eastern side had never been, till of late years, visited by travellers; and we were told that the vale only existed on the western side, and that the feet of the eastern mountains were bathed by the waters. But this is now known not to be the fact.

The north-western as well as the southern shore of the lake is generally sandy; but, passing down on the western side, we soon come to the plain, which reaches to the town of Tiberias, and which may average nearly a mile in breadth. The streams which come down from the mountains, and cross this plain to enter the lake, occasion a luxuriant herbage along its borders. The pastures of the sloping meadows which form this plain are proverbial for their richness among the inhabitants of the neighbouring districts. It is, indeed, exceedingly fertile, but for the most part uncultivated. The waste parts are covered with the rankest vegetation,—reeds, nebbek-trees, oleanders, honey-suckles, wildflowers, and splendid thistles in immense crops.

<sup>a</sup> 'Geographical Journal,' 1837, p. 456.

<sup>b</sup> See p. lvil.

<sup>c</sup> So Buckingham calls it, 'Arab Tribes,' 398.

<sup>d</sup> Burekhardt, 22—42; Richardson, ii. 445—464; Buckingham, 'Arab Tribes,' 399—406.

There are fig-trees, and a few palm-trees occur here and there. Approaching Tiberias,<sup>a</sup> we pass the warm mineral springs, which have already been noticed in this work; and, in the vicinity of the town, we find the plain and the lower slopes of the hills under cultivation. The heat of the climate would allow the inhabitants to grow almost any tropical plant; but the only products of their fields are wheat, barley, dhourra, tobacco, melons, grapes, and a few vegetables. The melons are of the finest quality, and are in great demand at Acre and Damascus, where the fruit is nearly a month later in ripening. The climate here, and generally on the borders of the lake, is extremely hot, and is alleged by Burckhardt to be unhealthy, as the mountains impede the free course of the westerly winds, which prevail throughout Syria in the summer. Hence intermittent fevers, especially those of the quartan form, are very common at that season. Little rain falls in winter; snow is almost unknown on the borders of the lake, and the temperature appears to be nearly the same as that of the Dead Sea.

Under the altered circumstances of Syria, Lord Lyndsay was enabled to accomplish that examination of the *eastern* margin of the lake which Seetzen attempted in vain.<sup>b</sup> And, as the result of his survey, he tells us that, "So far from finding the road rugged or difficult, it was far easier than on the western bank; in fact, by far the best we have ever travelled in Syria—lying entirely through meadows, covered with corn, that descended to the water's edge;—and this description applies to the whole eastern side of the lake; the western is much more rugged and precipitous. Nothing can exceed the beauty of the lake and opposite mountains, at sunset; the view from Tiberias is quite tame in comparison."<sup>c</sup>

What is more usually called the Ghor, or Valley, of the Jordan, is that part which lies between the two lakes of Gennesareth and Asphaltites, the direct distance between which is about sixty-five miles. This beautiful plain is five or six miles across<sup>d</sup> in the northern half, but widens greatly in its progress to the Dead Sea. It occurred to Seetzen that this plain of El Ghor greatly resembled that of El Bekaah (already described), save that the mountains which inclose the Bekaah are far more grand than those which bound the Jordan valley. The great number of rivulets which descend from the mountains on both sides of the Ghor, and form numerous pools of stagnant water, produce in many places a pleasing verdure, and a luxuriant growth of wild herbage and grass; but the greater part of the ground is a parched desert, of which a few spots only are cultivated by the Bedouins. In the neighbourhood of Bysan (*Bethshan*) the soil is entirely of marle; there are very few trees, but wherever there is water high reeds are found. The river itself flows in a valley about three quarters of a mile in breadth, which is considerably lower than the rest of the plain of the Ghor; and this lower valley is covered with high trees and a luxuriant verdure, which afford a striking contrast with the sandy slopes which border it on both sides. Except for the town of Bysan, and the village of Rihhah (Jericho?), the plain is wholly unoccupied, unless by the Bedouins.<sup>e</sup>

On approaching the Asphaltic Lake, the distance between the opposite mountains, as already intimated, is greatly increased—leaving between them and the river, on the east, the plains of Moab, and on the west the large plain of Jericho. As almost all the pilgrims and travellers in the Holy Land have made it a point to visit the Jordan,—to reach which, from Jerusalem, they must cross this plain,—there are few parts of Palestine which have been more frequently described. This plain is very extensive, probably eighteen miles in extreme length, by a breadth of seven or eight miles. It is bounded, internally, by tall mountains, which form a kind of bow by bending westward in their course from north to south. Of this bow the Jordan is as the chord. Beyond the river, eastward, are other mountains, as high or higher than these, and still more distant from the river; the whole making the plain appear as the arena of an amphitheatre. This circle of enclosing mountains causes an extraordinary degree of heat in the plain, by the concentration and reflection of the sun's rays. The almost tropical warmth of this plain may also be partly ascribed to the sandy nature of its soil, the great depression of

<sup>a</sup> Now pronounced *Tabaria*, or *Tabarea*h.

<sup>b</sup> Seetzen seems to say he had succeeded. He certainly did *visit* the eastern shore, but did not traverse its extent. From the north he went a little way down the eastern side to an Arab camp, but was obliged to return; and from the south he went up the eastern shore as far as Feik, but the extensive tract *between* these two points he did not see.

<sup>c</sup> Burckhardt, 318—331; Buckingham, c. xxvi.; Lyndsay, 87—92.

<sup>e</sup> Seetzen, 22; Burckhardt, 344.

<sup>d</sup> "Two hours."—*Burckhardt*.



its surface, the obstruction which the enclosing mountains offer to the passage of the external breezes, and, in some degree, to the aridity of the sides and summits of these mountains; for, as well observed by Mariti, that heat is reflected with much greater force from such than from fertile or cultivated hills. The heat is so very strong, that as early as the latter end of April it deprived Morison of his appetite and sleep; and Nau, as late as October, found even the nights oppressively warm.

The soil of the plain is almost entirely composed of sand; but beyond Rihhah, to the north and to the east, it seems to be better, and not infertile. But the soil of the whole plain, the fertility of which has been so much extolled by various Latin writers, is not naturally fertile. All the richness it ever had, or yet, in some quarters, retains, has been owing to the spring of Elisha, which, in such a climate, rendered even this poor soil most productive wherever its waters came; and certainly the appearance which it formerly offered, when these waters were dispersed far around in numerous irrigating rills, must have been very different from that which it exhibits now, when, with the exception of some fruitful spots, the whole presents an arid and desolate appearance, and only one poor stunted palm-tree can be found within view of the ancient "city of palms."<sup>a</sup>

Going down towards the head of the Dead Sea, the soil is still barren, but ceases to be sandy, having a surface of dark-coloured earth, which might be taken for *alluvium*, but that it produces nothing but a few solitary desert plants, and seems as if included in the curse which overthrew the cities of the plain. It is much intersected by deep torrents, and crusted at the top, as if flooded occasionally by the swellings of the Jordan, or washed by copious rains.<sup>b</sup>

The Dead Sea is hemmed in on the west by the mountains of Judea, and on the east by those of Moab. Of these mountains, and of the mineral products of this region, we have already written; and our attention must now be confined to the vale which is left, on the east and on the west, between the margin of the lake and the feet of the mountains. The plain on the east side, which continues to bear the name of El Ghor, varies in breadth from one to four miles. It is not so entirely a desolation as the common descriptions of the lake would lead us to suppose. It has many fertile spots, particularly towards the south, and is to a great extent covered with forests, in the midst of which the miserable peasants who inhabit there build their huts of rushes, and cultivate their fields of dhourra and tobacco. The spots not cultivated are, for the most part, sandy; so that there is but little pasturage, and the camels feed principally upon the leaves of trees. The resident peasants may amount to about 300 families. They live very poorly, owing to the continual exactions of the neighbouring Bedouins, who descend in winter from the mountains of Belka and Kerek, and pasture their cattle amidst their fields. The heat of the climate in this low valley, during the summer, renders it almost uninhabitable. The people then go nearly naked; but their low huts rather increase the mid-day heat, than afford shelter from it.<sup>c</sup>

The character of the plain on the western border of the lake was perfectly unknown until lately visited by Professor Robinson and Rev. Eli Smith. All that former travellers could state amounted to some general impression formed from the partial and obscure view taken from the head of the lake. The American travellers advanced from the west to a point near the southern extremity of the lake, where the name of Ain Jiddi points out to us the Engeddi of the Bible. They first obtained a view of the lake from the summit of a precipitous cliff, overhanging Engeddi and the lake at the height of at least 1,500 feet. From this point we will copy their statement, with the omission of some parts which we shall require for another purpose:—

"The Dead Sea lay before us in its vast deep chasm, shut in on both sides by precipitous mountains, and, with its low projecting points and flat border towards the south, resembling much a long winding bay, or the estuary of a large river<sup>d</sup> when the tide is out and the shoals left dry. We descended to the shore by a pass more steep, rugged, and difficult than is to

<sup>a</sup> Nau, 349; Morison, 507; Surtius, 491; Mariti, ii. 305; Monro, ii. 134-8; Taylor, 'La Syrie,' 175.

<sup>b</sup> Monro, ii. 145-6.

<sup>c</sup> Burckhardt 390, 391.

<sup>d</sup> An American bay, an American river, of course.

be found among the Alps, and pitched our tent near a fine large fountain which bursts out upon a narrow terrace still 400 feet above the sea. The water of the fountain is beautifully transparent, but its temperature is 81° of Fahrenheit.

“The whole descent below the fountain was apparently once terraced for gardens; and the ruins of a town are to be seen on the right. The whole slope is still covered with shrubs and trees of a more southern clime. Nothing is needed but tillage to render this a most prolific spot. The soil is rich, the heat great, and water abundant. The approach to the sea is here over a bank of pebbles, several feet higher than the level of the water as we saw it. The phenomena around the sea are such as might be expected from the nature of its waters and the character of the region round about,—for the most part a naked, dreary waste.

“Next morning we were compelled to re-ascend the pass in order to proceed northward along the shelving table-land above; the projecting cliffs cutting off all passage below along the water. At night we encamped again on a cliff 1,000 feet above the sea, overhanging the fountain Turabeh which is below on the shore.

“We continued our course next day, descending again by a difficult pass; and after travelling several hours along the shore and over the plain, the soil of which is here in many parts like ashes, we arrived at the lower fords of the Jordan.”<sup>a</sup>

We have now to examine the great valley of Araba, which extends between the Asphaltic Lake and the Red Sea. The account which we have already given<sup>b</sup> of the mountains which enclose this valley was intentionally made to include such information as we possessed concerning the valley itself, that it might not be necessary again to return to it. But since then the Count de Bertou has communicated to the public a very interesting account of a journey made by him in April, 1838, throughout the whole extent of the valley from north to south. As he is the only European who has seen the whole of this important valley, and as his conclusions are adverse to those of the travellers who, from Burckhardt downward, have only seen it in parts, it is desirable that we should report the more important of his observations.<sup>c</sup>

It is only necessary to premise that, as we have more than on one occasion stated, Burckhardt saw good reason to conclude that the Jordan once flowed through this valley to the Red Sea, and that all subsequent travellers, till M. de Bertou, have acquiesced in this conclusion.

The name El Ghor for a time is continued to the plain or valley south of the Dead Sea. M. de Bertou, on reaching the southern end of that lake, found the Ghor to be from two to three miles wide, and travelled over a plain covered with salt at the foot of salt-hills.<sup>d</sup> These hills diminish in height to the southward, and form the foreground to higher ranges behind them; they are in every part furrowed by salt torrents, which flow in winter and inundate the plain. Seven miles<sup>e</sup> from the end of the Dead Sea the Count reached the chain of low hills, which since the morning had appeared to him the limit of El Ghor, and *to close it up, by uniting the mountains of salt to those of Arabia. These hills are from sixty to seventy feet in height, and composed of a whitish and very friable sandstone*: they form the buttresses or out-works (*contresorts*) of the desert, which stretches to the south, and is known by the name of Wady Araba: they are channelled by numerous small streams which fall into El Ghor and eventually into the Dead Sea. Just before reaching these hills the guides turned suddenly to the right, and cried out, “Wady Araba, Wady Araba!” and then the party entered this celebrated valley. M. de Bertou confesses that this valley had at first the appearance of the bed of a great river; and *if its slope were not visible towards the Dead Sea, one would exclaim on seeing it, “This is really the bed of the Jordan:”* it is, however, he tells us, the bed of a torrent which flows in an opposite direction, namely, from south to north, and falls into El Ghor. There was no water in it. Its breadth, which is from 250 to 300 yards, is filled with

<sup>a</sup> ‘American Biblical Repository,’ 1839, vol. i. part ii. p. 418, 419.

<sup>b</sup> Page xlii.—xlv.

<sup>c</sup> The account of this journey which we employ is that given in vol. ix. pp. 277—286, of the ‘Journal of the Royal Geographical Society.’ The article is entitled, ‘Notes of a Journey from Jerusalem to Hebron, the Dead Sea, El Ghôr, and Wâdî Arabah to Akabah, and back by Petra, in April, 1838. By the Count de Bertou.’

<sup>d</sup> We may here mention that the saline plain around the southern extremity of the Dead Sea appears to be the scriptural ‘Valley of Salt.’ 2 Kings xiv. 7.

<sup>e</sup> So the account which we cite; but the map in the same Number of the ‘Geographical Journal’ makes the distance not less than twelve miles.

tamarisks: it extends in a S.S.W. direction, and is bounded by almost vertical banks of gray freestone about 150 feet in height. In the continuation of this valley the hills on the right appear to be more furrowed than those on the left.

After proceeding eleven miles, the travellers came in sight of Mount Hor in the distance. Still advancing, the Wady became broader, and assumed the aspect of a desert; the hills on each side decreased in height, and the plain seemed to ascend. At twelve miles the banks of the valley to the left disappear, and on the right distant mountains are perceived to the S. W. At eighteen miles a pause was made at a spring of tolerable water for the Desert, at the point where the valley is crossed by the road from Petra to Hebron. As the Count does not diverge to Petra, but continues straight on towards Akaba, his route even from this point continues to be one not in modern times trodden by a European.

After travelling some miles from the well, the valley becomes about 1,500 yards wide; and at ten miles from that well, another was reached of the temperature of 59° Fahrenheit, the water being detestable both in taste and smell. Near this spring is a rock of soft reddish freestone, 70 feet high, covered with the names, or rather marks, of the Arabs who pass by this road. Beyond this the ground is covered with flint pebbles; all vegetation has disappeared; and the Wady is gradually lost in the slightly undulating plain which extends towards the mountains in the east. And here, to prevent confusion, it may be proper to apprise the reader that our previous statements embraced the whole breadth of plain to the eastern hills of Seir, whereas the Count, to this point, limits his statement to the comparatively narrow valley of the torrent on its western border.

The next morning the travellers passed on the right the Wady Talh (Acacia Vale), which extends to the westward, and which the Arab guides pointed out as the road to Egypt, being in fact the route which Burckhardt followed in 1812, when he went from Wady Mousa to Cairo. "From the junction of the Wady Talh," says M. de Bertou, "the Arabs give the name of Akaba (the Ascent) to the southern prolongation of the Wady Araba, so that *this spot would seem to be the line which separates the waters flowing to the Dead Sea from those discharged into the Red Sea. Indeed it is impossible to mistake the two slopes, one to the north and the other to the south.*"

From this point the road continued to be covered with small black flints, and with large but withered roses of Jericho. After having passed the Wady Gharendel the travellers continued their journey against the simoom wind, which brought with it a quantity of fine sand with which the plain is covered. The day following brought them to the spring of Ghadiyan, which is strongly impregnated with sulphur.

To this point, it will be observed, the route of Count de Bertou has been over ground untrodden by any modern European, except where Burckhardt *crossed* it in his way from Petra to Egypt, and where Stephens and Lord Lyndsay *crossed* it in their way from Petra to Hebron. For the motive which has led travellers to enter the Wady Araba, has been the visit to Petra, which visit has always been made from Akaba. And the road from Akaba to Petra lies along the western side of the great valley only as far as this spring; then it inclines over to the eastern hills to reach Wady Mousa, in which Petra lies. Returning thence, the route again inclines over to the western hills, to reach the roads to Cairo, Gaza, or Hebron,—that is, merely to get out of the valley westward, not to travel along its western border. Hence the peculiar claim of M. de Bertou is, that he has traversed the western edge of the valley *through its whole extent.*

Below the spring of Ghadiyan, the valley is spread out into a great plain, covered with small gravel of porphyry and granite; twenty-four miles through which brings the traveller to Akaba. As this great valley was traversed by the Hebrews in their pilgrimage, it is interesting to read the first feeling of the traveller who arrives at Akaba after having passed through it:—"The luxury of having fresh water in abundance, after having been obliged for eight days to drink water impregnated with brimstone, and exhaling an odour of rotten eggs, and for the last two days even to have occasionally wanted that, is not easily imagined by those who have not experienced it; and when we saw the sakka (water-carrier) come to water

the ground both within and without our tents, we could not help exclaiming against the apparent waste of so precious a fluid."

The return route of M. de Bertou by Petra, to Hebron, is the same which other travellers have taken, and does not here require to be noticed. It offers no new facts—nor, perhaps, were any thought needful—in support of his grand conclusion, that, "*in the present state of things, the Jordan never could have flowed into the Ælanitic Gulf.*"

We must honestly confess that we have received this announcement with more pain and reluctance than we ever thought that a mere geographical fact could possibly occasion. In the next chapter we shall have a more suitable occasion than now offers of subjecting it to the examination which it requires, and to receive it without murmuring, if we find that it must be received; even though, in its obvious consequences, it overturns a most satisfactory and beautiful explanation, on which the mind could repose, of very serious difficulties, and revives them into greater force than they even formerly possessed.

We shall now proceed to notice the valleys and plains of Palestine, which extend laterally between the two great longitudinal lines which we have now traced. In executing this part of our work we purpose to include in our survey all the plains and valleys which are of Scriptural or historical consequence, even though they may be of small geographical importance. We shall, as before, proceed from north to south.

Of the plains and valleys in the northern part of Palestine—that is, in Galilee, besides those which have already been noticed in our survey of the two principal lines—our information is very scanty. In this, as in other cases, our information decreases with our distance from Jerusalem—that great centre of all interest and inquiry connected with the Holy Land.

Many of the valleys of Galilee are small, but beautifully wooded, and the villagers who occupy them seem to be among the most happily situated of the inhabitants of Palestine.

Speaking generally of this part of Galilee, which belonged to the tribe of Zebulon, Clarke says, "The scenery is to the full as delightful as in the rich vales upon the south of the Crimea: it reminded us of the finest parts of Kent and Surrey. The soil although stony is exceedingly rich, but it is now entirely neglected."

THE VALLEY OF ABILENE is the first of the vales which lie beyond the hills which skirt the coast between Cape Nakhora and Acre. It is long and narrow, and bounded by low hills covered chiefly with oak.<sup>a</sup>

The vale, which is particularly distinguished as the VALLEY OF ZEBULON, lies to the south-east of this, and is the first vale immediately from the plain of Acre. It is of somewhat an oval figure, and between three and four miles in length by one in breadth. This valley must have been a treasure to the tribe of Zebulon, to which it belonged, and by which it was doubtless well cultivated. Although now under very partial cultivation, the natural fertility of the soil may be easily estimated by the dense abundance of the plants, field-flowers, and herbs, which it spontaneously produces. The enclosing hills are beautifully wooded, chiefly with the carob-tree and a sort of oak with whitish leaves. The pasturage of the vale is accounted among the finest in the Holy Land.<sup>b</sup>

THE VALE OF SEPPHORIS takes its name from the city of Sepphoris, also called Dio Cæsarea, which Josephus describes as the chief city of Galilee. It still survives as a village, and continues to bear its old name in the slightly different form of Sephoury. This vale is separated by hills from that of Zebulon, which is to the west of it; and it is on these hills that the town of Sephoury stands. This valley is about the same length as that of Zebulon, and forms a very fine plain, the verdure of which in the spring is most striking, abundantly enamelled with an endless variety of flowers, among which tulips of every colour are most conspicuous. The town and valley are celebrated for several circumstances in the later history of the Jews, and in the wars between the Moslems and the Christian kings of Jerusalem, which it will be our future duty to record.<sup>c</sup>

<sup>a</sup> Robinson, ii. 243.

<sup>b</sup> Morison, 178; Pococke, vol. ii. part 1; Clarke, iv. 131; Skinner, i. 141; Robinson, i. 243.

<sup>c</sup> Zuallart, iv. 77; Morison, 179; Pococke, vol. ii. part 1; Clarke, iv. 131-136.

The small VALE OF NAZARETH, in which Jesus Christ was born and passed his early years, claims to be noticed on that account. It is a kind of hollow or basin, formed by inclosing mountains of no great height. "It seems," says Dr. Richardson, "as if fifteen mountains met to form one enclosure for this delightful spot; they rise around it like the edge of a shell to guard it from intrusion. It is a rich and beautiful field in the midst of barren mountains. It abounds in fig-trees, small gardens, and hedges of the prickly pear, and the dense grass affords an abundant pasture. The village stands on an elevated situation on the western side of the valley, and contains between 600 and 700 inhabitants." This picture is in agreement with that which other travellers have drawn. Lord Lindsay thinks them all too highly coloured.<sup>a</sup>

The declivity from the central hills of Galilee towards the great valley of the Jordan is formed by a succession of narrow plains rising one above another from the valley of that river. Here the soil is everywhere a fine black mould, deep and perfectly free from stones, and appearing in such a climate capable of almost any production, were but the hand of man applied to it.<sup>b</sup>

Behind the hills which bound the lake of Gennesareth on the west there are some valleys which tradition indicates as the scenes of some of the transactions in the history of Jesus Christ, which certainly must have occurred somewhere in the neighbourhood. One of these is that in which Christ is supposed to have multiplied the seven loaves and fishes.<sup>c</sup> This valley is long and of moderate width. The extremity, which advances towards the lake of Gennesareth, is between Tiberias and Bethsaida. It is a fine valley, with green and abundant grass, and well capable of containing, seated thereon, a great number of people. The hill, on which our Lord is alleged to have stood when he blessed the loaves and fishes, is of less height than some of those on the opposite side of the valley. It bears the somewhat odd name of "La Table de la Multiplication," according to Nau, who with his party sat down and ate a commemorate morsel of bread on the spot.<sup>d</sup>

From the top of this hill is visible the alleged Mount of Beatitudes, of which we have already spoken (p. lvi.), and which it is only necessary to mention further for the sake of stating, that it stands detached in the midst of an extensive plain, greatly elevated above the level of the Jordan, from which cause even the low summits found here command extensive prospects in different directions.<sup>e</sup>

From hence the road westward to Cana lies over a succession of broad valleys for nearly three hours. In one of these, about two miles from Cana, an old terebinth-tree is pointed out as marking the field in which the disciples of Christ occasioned a dispute with the Pharisees by plucking ears of corn on the sabbath-day.<sup>f</sup> This is a fertile champaign, and is, or was, under partial cultivation.<sup>g</sup>

Before leaving this part of the country, it may be well to notice the extensive valley or plain which lies behind the hills which bound the northern extremity of the lake of Gennesareth, on the western side. Richardson, the only traveller who has passed this plain since Pococke, describes it as "an extensive open field, which bore an abundant crop of thistles, and in which herds of black cattle were feeding." This is in conformity with the accounts of the old travellers. It is, in

<sup>a</sup> Richardson, ii. 434; Lindsay, ii. 82.

<sup>b</sup> Robinson, i. 234.

<sup>c</sup> Matt. xv. 32.

<sup>d</sup> The accounts of some of our own travellers differ from this and from one another about the alleged scene of this miracle. The old Catholic travellers, especially when priests or monks, were certain that they were at the spots which their traditions (whether right or wrong) indicated, and could not be deceived. But our own Protestant or sceptical travellers—and, as such, indifferent or doubtful—might, at the convenience of their guides, have almost any site or object pointed out to them as that for which they inquired. So between wrong indications on the one hand, and from misunderstanding the tradition when the right indication has been given, on the other, they often manage to arrive at a very strong conclusion concerning the doltish knavery of those who settled the sites of such transactions. Now, men are seldom such dolts as travellers think them. In the present case a wrong site seems to have been shown to some, while others have understood that it was exhibited as the scene of the multiplication of the *six* loaves and the fishes, which they triumphantly tell us must have taken place on the opposite or eastern side of the lake. But all the old Catholic travellers say that it was the miracle of the *seven* loaves, not of the *six* loaves, which took place here. Most of them were quite aware of the difference between the sites of the two miracles, and Father Nau has as clear and able an explanation on the subject as can possibly be given. We are far from undertaking to say that this was really the site of the miracle in question. That is a matter with which we have nothing to do in the present work; but it appears to us as probable a site as could possibly be indicated in the neighbourhood.

<sup>e</sup> Nau, 596; Elliot, ii. 358.

<sup>f</sup> Luke vi.

<sup>g</sup> Morison, 194; Nau, 597.

fact, an extensive plain, forming a rich pasture-ground, on which account it seems, in all times, to be much frequented by the Bedouins with their flocks. It bears the name of Dothan, from a village so called, and is regarded by the inhabitants of Palestine, as well as by the Jews, as the ground on which the sons of Jacob were pasturing their flocks when they sold Joseph to the Ishmaelites. We are told, in the sacred narrative, that Joseph had expected to find them near Shechem, but, on arriving there, heard that they had removed their flocks to Dothan, and went there to seek them. That this plain is the Dothan in question has been disputed, on the ground of the distance from Hebron and from Shechem. The town of Shechem is two days and a half, or three days' journey from Hebron, and this present plain is about an equal distance from Shechem. To counterbalance this, there are the facts—that this plain is a famous pasture-ground, and that it lies on the road to a well-known place of passage over the Jordan (where there is now a bridge, called Jacob's Bridge); so that it is a very likely place for the Ishmaelite traders to have passed in their way to Egypt. Whatever be the probabilities of the question, the objections, founded solely on the distances stated, do not deserve attention, when the habits of the migratory shepherds are taken into account. Such writers, therefore, as Nau and Morison, long resident in the country, and well acquainted with Bedouin habits, are more in the right, when they refer to such habits as explaining the distance, than Richardson, who, with a palpable reference to the habits of another condition of life, remarks:—"This is a long way from Hebron for the sons of Jacob to go to feed their herds, and a still further way for a solitary youth like Joseph to be sent by his father in quest of them." But Joseph was *not* sent by his father to Dothan, but only to Shechem, and Joseph, of his own accord, went to Dothan when he could not find them there.—But we will not be tempted into these questions; and we beg it to be understood that, in mentioning a particular spot as the alleged scene of this or that transaction, we feel it no part of our present duty to examine the truth or probability of the allegation, unless when some point of public history is involved, of sufficient importance to render such an examination expedient. But we may say, generally, that in all such cases, we should, in the first instance, be disposed to consider the current determinations of sites to be right, unless we could find some good reasons to conclude them wrong—rather than, with some travellers and writers, deem them all, in the first instance, to be wrong, until we find good reasons for believing them correct.

We shall now leave this northern division of Palestine, and proceed to the great central plain which divides Galilee and Samaria.

THE PLAIN OF ESDRAELON, known in Scripture as the "Plain of Megiddo," measures about thirty miles in length, from east to west, and eighteen in breadth, from north to south. On the north it is bounded by the mountains of Galilee, and on the south by those of Samaria; on the eastern part, by Mount Tabor, the Little Hermon, and Gilboa; and on the west by Carmel, between which range and the mountains of Galilee is an outlet, whereby the river Kishon winds its way to the bay of Acre. Professor Robinson, in his instructive memoir, informs us that the eastern part of the plain has never yet been correctly laid down in the maps. "Two mountain-ridges run out into it from the east, commencing near the brow of the Jordan valley, and extending westward to near the middle of the plain. The southern ridge is Gilboa, and the north is the Little Hermon of Jerome. They divide the eastern half of the plain into three parts; of which the northern and southern decline towards the west, and their waters flow off to the Kishon, while the middle portion, between Gilboa and Hermon, slopes to the east, and its waters descend to the Jordan through a broad valley, or plain, at Bysan, the ancient Bethshan." This central valley, or plain, may, we suppose, be the VALLEY OF JEZREEL, so often mentioned in Scripture, although that name appears to have been sometimes applied in a large sense to the whole plain of Esdraelon.

This great plain possesses the elements of great fertility, having a rich alluvial soil, about three feet deep, resting on a substratum of gravel and whitish limestone. As seen from above, it is not a perfect level, but a tract of gentle undulations, in the midst of the hills which inclose it on every side. It is destitute of trees; but so rich and spontaneously fertile is the soil, that Morison thinks that, if it were cultivated as it ought to be, it would alone suffice to supply the

whole of Galilee with corn, even were that province as populous now as it was in ancient times. But, he says, it was in his time almost entirely uncultivated, although so covered with green herbage, as to evince what Nature could do if seconded by man. It is difficult to account for this last intimation, as other writers, before and after Morison, describe the plain as being to a considerable extent under cultivation. Zuallart implies that much was cultivated, and the remainder left to pasturage; for he describes it as affording abundance of corn, wine, oil, herbage, and all things necessary to the life of man or beast. D'Arvieux, who was there in May, when the corn had nearly reached maturity, says that when one looks over the plain from an eminence, and sees the immense surface of corn in motion from the breeze, a lively image of the agitations of the sea is presented to him. It is still probably cultivated to the same extent. In early spring, Major Skinner saw the plains green in all directions with the rising grain. Another recent traveller, whose name we forget, describes much of it, particularly in the eastern part, as furrowed by the plough. Yet Clarke speaks of it as "one vast meadow, covered with the richest pastures." From all this we collect that there is much pasture-ground, and much cultivation in the plain: and those who describe it as uncultivated, but rich in natural herbage, passed through those parts only which were in this state, and inferred all the rest to be like it, as they could not well, in the wide general survey from an eminence, distinguish, in so fertile a plain, the cultivated from the uncultivated parts, especially after the crops have been gathered in.

In the distribution of Canaan to the people of Israel, by Joshua, this celebrated portion fell to the lot of Issachar, who in its fertile and well-watered soil had abundant cause to "rejoice in their tents."<sup>a</sup> And at this day some of the more peaceably inclined Bedouin tribes are seen living under tents, surrounded by their flocks, for the sake of the rich pastures it affords. Thus the latter end of the country is like its beginning. *Then* the old patriarchs wandered with their flocks among the towns and villages of Canaan, and fed them, even in the peopled districts, without molestation. This was before the country had become populous; and now the same thing is witnessed when, after having been most populous, it has again become thinly peopled.

The historical celebrity of this plain is very great. It is that "mighty plain"—*μέγα πεδιον*, as it is called by many ancient writers,—which has in all ages been the famous battle-ground of nations. In the first ages of the Jewish history, as well as during the Roman empire, the Crusades, and even in later times, it has been the scene of many a memorable contest. In this great plain, Barak, descending with ten thousand men from Mount Tabor, fought with the kings of Canaan, "by the waters of Megiddo." Here king Josiah was slain in battle with the Egyptians. And "it has been the chosen place for encampment in every contest carried on in this country," to use the words of Dr. Clarke, "from the days of Nabuchodonosar, king of the Assyrians, until the disastrous march of Napoleon Buonaparte from Egypt into Syria. Jews, Gentiles, Saracens, Crusaders, Egyptians, Persians, Druses, Turks, Arabs, and French, warriors out of every nation which is under heaven, have pitched their tents upon the plain of Esdrael, and have beheld their banners wet with the dews of Tabor and of Hermon."<sup>b</sup>

The country of Samaria, situated between Galilee and Judea, has been much less explored than either. Pilgrims and travellers have crossed and re-crossed Judea and Galilee in every direction, in order to visit the different spots of sacred or historical interest which are dispersed in them. But the only points in Samaria which the sacred history has made memorable are about Shechem and Samaria, which are not more than four miles from each other; and as no other part of the country has been thought worthy of attention, no route but that which includes these two places has been followed. Content to look at Shechem and Samaria in their way, pilgrims and travellers have regarded this really interesting and important part of Palestine merely as a road from Galilee to Judea, or from Judea to Galilee, in which the same well-

<sup>a</sup> Dent. xxxiii. 18.

<sup>b</sup> Elliot, ii. 360; 'Am. Biblical Repository,' No. xxxiv. 429; Morison, 220; Zuallart, iv. 83; Roger, 73; Quaresmius, lib. vii. cap. 4; D'Arvieux, ii. 292; Clarke, iv. 356—360; Jolliffe, 42; Jowett, ii. 191; Skiuner, i. 276; Robinson, i. 214; Stephens, ii. 347.

trodden path has almost invariably been followed. Samaria, being thus very imperfectly known, the notice we have to take of its valleys will be found greatly disproportionate to the relative extent of its figure in the maps of Palestine.

Samaria seems, upon the whole, a much more *open* and less mountainous country than either Galilee or Judea. It has mountains, indeed, but they are in general less high and abrupt, and of more rounded forms, than those of the north or south. There is little of stern or sterile aspect in Samaria. The sides of the shapely hills are for the most part beautifully wooded, while the valleys commonly open out into fertile plains or basins, surrounded by hills. These plains and valleys are watered by numerous streams, which contribute greatly to their fertility. Of the trees with which this fine province is stocked, the olive-trees greatly exceed all others in number. Wild animals<sup>a</sup> and feathered game (especially the red partridge) are more abundant than in Judea, or even in Galilee. But with all these advantages, towns and villages occur less frequently than in the other two provinces, nor are the inhabitants near as numerous. It being a more open country, and therefore more exposed to injuries and oppression, may possibly account for this.

The valley of Jennin—one of the numerous vales which lead out of the plain of Esdraelon—is that through which the usual route from Galilee to the city of Samaria lies. This valley is about thirteen miles long, and its width is about two miles in the northern part,—that is, as far as the interruption offered about midway by the hill on which stands the ruined castle of Sanhooor, after which it becomes more narrow. This valley, which some take to be the Scriptural valley of Jezreel, is watered by a brook, and is very fertile, well planted with olive-trees, considerably cultivated, and offering green pastures in those parts to which cultivation does not extend. This valley was doubtless in former times, as now, the high road by which the inhabitants of Galilee, who “must needs go through Samaria,” journeyed when they went to celebrate the periodical festivals at Jerusalem.<sup>b</sup>

The city of Samaria<sup>c</sup> stood but a few miles from the termination of this valley. It offers a curious and imposing appearance, standing, as it does, in terraces upon a high semi-spherical mount, standing alone in the midst of one of those inclosed basins or hollows for which Samaria is particularly noted. The inclosed valley which surrounds the central hill is very beautiful, watered by running streams, and covered by a rich carpet of grass, sprinkled with wild flowers of every hue; while beyond, stretched like an open book before one who stands upon the hill, lies the boundary of pleasant mountains, on which the olive and the vine are seen rising in terraces to the very summits.<sup>d</sup>

From this place Lord Lindsay took a route across the country to Carmel,<sup>e</sup> which enabled him to see a portion of Samaria not often visited by travellers. He describes the country as full of villages, well cultivated, and quite beautiful. After clearing the hills he proceeded along a beautiful and very extensive plain—a prolongation, doubtless, of the vale of Sharon—where the scenery suggested a comparison with Kent. “Nothing could exceed the richness of the soil or the beauty of its produce, even of the thistles, with which every fallow and uncultivated field was overgrown, and which were of the deepest hue and most luxuriant growth. Presently, leaving the plain, we rode for two hours through a range of sloping hills covered with beautiful valonidis, or evergreen oaks,—regular English park scenery; then the trees ceasing, through a continued expanse of sloping downs, till we reached the southern prolongation of Carmel.”<sup>f</sup>

Sandys, in travelling by land from Ramla to Acre (a rare journey), passed through the districts thus described; but the first part of his journey lay through the western part of a more southern portion of Samaria than Lord Lindsay saw. He speaks mostly of woods. He passed behind, inland, that wood of Sharon, the outer part of which, facing the coast, we have

<sup>a</sup> Perhaps it was so anciently also. See 2 Kings xvii. 25, 26.

<sup>b</sup> Dr. Robinson, *Am. Bib. Repos.*, 139, 428; Morison, 225, 228; Clarke, iv. 264; Maddox, Skinner, Stephens, Lindsay, and Elliot, *passim*, in Samaria.

<sup>c</sup> The ruined site now bears the name of *Subasta*, a modification of *Sebaste* [the Greek for Augustus], the name imposed on the city by Herod after it had been greatly improved by him.

<sup>d</sup> Elliot, ii. 381; Stephens, ii. 315.

<sup>e</sup> The route is the same as that of Shaw, of which Lord Lindsay does not seem to have been aware.

<sup>f</sup> Lindsay, ii. 76, 77.



already noticed. Of this he says,—“ After a while we entred a goodly Forrest full of tall and delightfull trees, intermixed with fruitfull and flowry lawnes. Perhaps the earth affordeth not the like, it cannot a more pleasant.”<sup>a</sup>



[Valley of Shechem, with Mounts Ebal and Gerizim.]

The town of Nablous—the Shechem of the Old Testament and the Sychar of the New Testament—is about four miles<sup>b</sup> south from the ruined city of Samaria. The long narrow valley in which it stands has already been described as extending its length from east to west between the mountains of blessing and cursing—the fertile Gerizim and the barren Ebal. So abundantly is this valley watered that, popularly, it is said to be enriched by 365 springs. “ There is nothing in the Holy Land,” says Dr. Clarke, “ finer than the view of Nablous from the heights around it. As the traveller descends towards it from the hills, it appears luxuriantly embosomed in the most delightful and fragrant bowers, half concealed by rich gardens and by stately trees collected into groves all around the bold and beautiful valley in which it stands.”<sup>c</sup>

This valley leads into a fine plain, waving with corn in the time of summer, and which is concluded to have formed or to have contained “ the parcel of ground which Jacob gave to his son Joseph,” being the same which he purchased from the Shechemites.<sup>d</sup> The road southward towards Jerusalem lies across this plain, from which we pass into the beautiful valley of Leban,<sup>e</sup> which, although narrow, is not under eight miles in length. On crossing a brook, and ascending the hills at the end of this valley, we leave Samaria and enter the kingdom of Judea.<sup>f</sup>

Travellers are apt to form the notion that a part of Palestine, so supremely honoured as Judea was, must needs surpass in fertility and beauty; and that the ancient descriptions of the glory and richness of the country at large must apply with concentrated effect to Judea in particular. This arises from an association of ideas which there is nothing in Scripture to call for or to warrant. We are aware of no passage in which Judea is so described even by implication. Cultivation—such cultivation as Judea anciently received, when the terraced sides of its hills were clad with olives and with vines, and when its valleys were waving with corn—might, and did, make it not inferior to any other part of the country, and perhaps superior in

<sup>a</sup> Sandys, 202.

<sup>b</sup> “ An hour and a half.”—Elliot.

<sup>c</sup> Clarke, iv. 267; Elliot, ii. 390.

<sup>d</sup> John iv. 5; Gen. xxxiii. 19.

<sup>e</sup> “ Labonah,” Judges xxi. 19.

<sup>f</sup> Maudrell, 63; Clarke, iv. 282; Lindsay, ii. 73; Elliot, ii. 407.

variety of produce : but in a state of nature—into which state it has nearly fallen back—it is, for the most part, the least pleasant and fertile part of Palestine, with the exception of some peculiarly favoured districts. All travellers confess this, some of them reluctantly and with heavy hearts. We have already intimated something of this in our accounts of the mountains of Palestine; but as we intend to let these chapters stand for a description of the country, there is no more suitable place than the present of enlarging somewhat further on this difference.

Of the three elements of fertility in this climate, water, warmth, and soil, Judea can only be said to have warmth. The climate is warmer than that of Samaria or Galilee, while the surface offers but little vegetable mould, and water is scarce; and hence, except for a short time after the latter rains, the land presents an aspect of drought and desolation, singularly at variance with the accounts which several ancient writers give of its former fertility and pleasantness, and most disappointing to those whose expectations have been based on those accounts,—forgetting that the country now wants that teeming population to which its ancient richness was owing,—that it is now still in enjoyment of its long sabbath, and is waiting the dawning of another day to resume the robes of glory and beauty it once wore.

In such a matter as this, the direct testimony of believing travellers is of much importance; and we therefore introduce the testimonies which follow. Maundrell, journeying to Jerusalem, after having left Samaria, by the route we have indicated, observes:—"All along this day's travel, from Kane [Khan] Leban to Beer, and also as far as we could see around, the country discovered a quite different face from what it had before—presenting nothing to the view, in most places, but naked rocks, mountains, and precipices."

Dr. Richardson advanced to Jerusalem by a very common route, from the N.W., by Jaffa and Ramla. The last-named town is on the inner border of the plain of Sharon. The hill country of Judea is distant two hours and a half from Ramla; but the characteristic desolation of Judea begins to be exhibited long before reaching these hills—that is, as soon as an ascent has been made from the frontier plain to another more elevated. "The aspect of the country," says the Doctor, "was now become bleak, the trees both few and small, the grass withered, from the little depth of soil, hard, and of bad quality. For some time before we reached the mountains, we kept looking up at their dusky sides, as they rose, in towering grandeur, to the height of 1000 or 1500 feet above our heads, covered with sun-burnt grass;<sup>a</sup> here and there disclosing strips of the bare horizontal rocks, and diversified with a few bushy trees, that stood at very unfriendly and forlorn distances from each other." Again:—"The hills, from the commencement of the mountain scenery [in this quarter], are all of a round, handsome shape, meeting in the base and separated at the tops, not in peaks, or pointed accumulations, but like the gradual retiring of two round balls placed in juxtaposition. Their sides are partially covered with earth, which nourishes a feeble sprinkling of withered grass, with here and there a dwarf shrub or solitary tree. They are not susceptible of cultivation, except on the very summit, where we saw the plough going in several places. They might be terraced; but there are no traces of their ever having been so. The rock crops out in many places, but never in precipitous cliffs; the strata in many places have exactly the appearance of stone courses in a building."<sup>b</sup>

The view over the north-eastern part of Judea, as commanded from the high ridge on which stands Anathoth,<sup>c</sup> the birthplace of Jeremiah, is thus described by Professor Robinson:—"From this point there is a view over the whole eastern slope of the mountainous region, including also the valley of the Jordan, and the northern part of the Dead Sea. The whole tract is made up of deep rugged valleys, running eastward, with broad ridges of uneven table-land between, often rising into high points. The sides of the valleys are so steep, that in descending into them we were often obliged to dismount from our horses. The whole district is a mass of limestone rock, which everywhere juts out above the surface, and imparts to the whole land only the aspect of sterility and desolation. Yet, wherever soil is found among the rocks, it is

<sup>a</sup> These observations were made in the middle of April.

<sup>b</sup> Richardson, ii. 221—223. This last passage more properly belongs to the chapter on Mountains; but we overlooked it at the time, and it is not unsuitably introduced in this place.

<sup>c</sup> Now Anata.

strong and fertile; fields of grain appeared occasionally; and fig-trees and olive-trees were scattered everywhere among the hills. Lower down the slope, towards the Jordan valley, all is desert.”<sup>a</sup>

Lord Lindsay, who traversed the whole extent of Judea from south to north, makes the important general remark,—“All Judea, except the hills of Hebron and the vales immediately about Jerusalem, is desolate and barren; *but the prospect brightens as soon as you quit it*, and Samaria and Galilee still smile like the Land of Promise.”<sup>b</sup> Mr. Stephens, who travelled the same route, says, in effect, nearly the same thing.

But there is a season—after the spring rains and before the hot sun has absorbed all the moisture left by them—when even the desert is clothed with verdure; and at that season even the valleys of Judea present a refreshingly green appearance. But this happy season is not naturally of long continuance, and the skilful or laborious hand of man is not now present to perpetuate the blessedness which that season brings.

After this general notice, we will now proceed to enumerate such of the particular valleys or plains as seem most to demand our attention.

The most northerly spot we shall notice is Ainbroot, which some suppose to be the scriptural Bethoron. This spot shines like a gem amid the desolation of Judea. All travellers mention it with admiration. The village is prettily situated upon an eminence, and commands on all sides a view of fertile and well-cultivated valleys. Lord Lindsay declares that this spot exhibited some of the loveliest scenery he had ever beheld—“Olive and fig-gardens, vineyards and corn-fields, overspreading the valleys, and terraced on the hills, alternating with waste ground, overgrown with the beautiful prickly oak and lovely wild flowers.”<sup>c</sup>

The VALLEY OF BETHEL has been already noticed (p. 108). Although stony, as of old, and surrounded by stony mountains, this vale is prettily situated about eight miles to the north of Jerusalem.

The Gibeon<sup>d</sup> of the Scriptures is situated upon a sharp rocky ridge, rising in the midst of broad valleys or plains, which form an extensive basin, full of corn-fields, vineyards, and orchards of olive and fig-trees.<sup>e</sup> The situation of this valley seems to correspond to that which some of the old travellers point out as the valley of Ajalon, over which Joshua commanded the moon to rest. But this valley has been indicated in so many and distant places, that it is difficult to receive this identification, especially if Jib be identified with Gibeon.<sup>f</sup> Morison says of this valley that it was the broadest of all he had seen in Judea, where, in general, the valleys are narrow and pressed close by their enclosing mountains.

The VALLEY OF JEREMIAH is a long and sterile vale, which takes its name from the notion that Anathoth, the birth-place and residence of the prophet, stood upon the enclosing hills. A narrow gullet or pass leads from this southward into the VALLEY OF ELAH, called also the Terebinth Vale, the alleged scene of David's victory over Goliath, and where they still show the brook from which the youthful champion picked the “smooth stones” with which he smote the Philistine. The whole, however—the vale *with* the enclosing hills—bears the name of the Wilderness of St. John [the Baptist], from its being supposed—we should think erroneously—to have been the scene of the birth and early history of the Great Forerunner. Notwithstanding the formidable name of “desert” or “wilderness,” this is altogether one of the pleasantest places in Judea. It is an agreeable solitude, enjoying a pure air and productive soil; and where, although the people are few, there is much cultivation, from which excellent corn and exquisite wine is obtained. As recent travellers have been somewhat confused in appropriating the respective names of the Valley of Elah and the Desert of St. John, it may be well to intimate that the eastern hills are those of Modin, while the western are more especially appropriated to the memories of the Baptist, and that the valley by which they are separated is that of Elah. The valley, *with* all the hills which enclose it, is the Desert of St. John. The vale now exhibits few of the terebinth-trees which gave it name; olive-trees

<sup>a</sup> ‘Am. Biblical Repository,’ 1839, p. 415.

<sup>d</sup> *Gabao* of Josephus, now *Jib*.

<sup>b</sup> Lindsay, ii. 70.

<sup>c</sup> Dr. Robinson, 416.

<sup>e</sup> Stephens, ii. 297; Lindsay, ii. 72.

<sup>f</sup> Josh. xx.

and carob-trees prevail. The famous brook is dry in summer, but in the season of rain it becomes a mighty torrent which inundates the vale. After ascending the hills which bound this valley, the southward traveller finds himself at the edge of one of the most dreary plains that can be imagined, covered with stone; and this extends to the borders of Jerusalem.<sup>a</sup>

The valleys which surround the height on which Jerusalem stands claim our especial notice, on account of the historical and sacred interest connected with them, rather than from their geographical importance in a general survey of the valleys of the land.

The renowned city is very singularly situated. Samaria offers some similarity of situation; and this similarity probably suggested the establishment there of that city, which was at one time the rival metropolis of the land. Samaria, as we have seen, stood on an eminence in the midst of a hollow enclosed by hills, and is therefore surrounded by the valleys which intervene between the bases of the enclosed and enclosing hills. Jerusalem, in like manner, is seated upon an eminence, or rather a collection of eminences, within a basin of enclosing hills and valleys. But this enclosure is only on three sides; for on the north the site opens to the high plains. Comparison between the sites of Jerusalem and Samaria ends with this *principle*, for there is no other resemblance. The shape and extent of the enclosed basin is different altogether. At Samaria the surrounding valleys are far more broad and cheerful, and the enclosing hills are more regular and beautiful than those at Jerusalem.

The figure of the site of Jerusalem being irregularly oblong, the valleys on the east and west—and especially the former—are much longer than the one on the south. To these valleys our present attention will be confined.

The most extensive and important of these valleys is that which lies east of the city—between it and the Mount of Olives. This is the VALLEY OF JEHOSEPHAT. It is rather more than a mile in length, but narrow, as there are few places in which its breadth exceeds 200 yards. This is that memorable valley so often mentioned under different names (!) by the sacred historians and prophets; and which is sanctified in the memories of men afar off by the knowledge that its soil is replete with the dust of thousands of holy and venerable personages; and has been moistened by the tears of the prophets and the blood of the saints. Who knows not, also, that this valley was often traversed by David, or by “the Son of Man,” whenever the record of their griefs bears witness that they crossed the brook of Kedron, or ascended Mount Olivet; or that it is the peculiar and awful distinction of this valley, that Jews, Mohammedans, and the mass of Christians, live and die in the persuasion that this is “the Valley of Decision,”—the valley to which all the nations shall be gathered in the great and terrible day of final judgment.

Properly speaking, this hollow is rather a ravine than a valley—“a deep and rugged ravine,”—as it is called by Lamartine, whose highly-wrought and figurative language is *here* applied with so much more than the usual appropriateness as to warrant the use of his description. “It was a deep and narrow valley, enclosed on the north by dark and barren heights which contained the sepulchres of kings, shaded on the west by the heavy and gigantic walls of a city of iniquities; covered at the east by the summit of the Mount of Olives, and crossed by a torrent, which rolled its bitter and yellow waters over the broken rocks of the valley of Jehoshaphat. At some paces distant<sup>b</sup> a black and bare rock detaches itself like a promontory from the base of the mountain, and, suspended over Kedron and the valley, bears several old tombs of kings and patriarchs, formed in gigantic and singular architecture, and strides, like the bridge of death, over the valley of lamentations. At that period [the time of Christ’s ‘agony’], no doubt, the sloping sides of Mount Olivet, now nearly bare, were watered by brooks from the pools, and by the still running stream of Kedron. Gardens of pomegranate, orange, and olive-trees, covered with a thicker shade the narrow valley of Gethsemane, which delves like a sanctuary of grief into the darkest depths of the valley of Jehoshaphat.”

<sup>a</sup> Roger, 152; Rochetta, 274; Morisou, 497, 534; Nau, 467; Skinner, i. 199; Stephens, ii. 208; Taylor, ‘La Syrie,’ 146.

<sup>b</sup> He is describing from the site of the Garden of Gethsemane, near the north end of the valley, at the foot of the Mount of Olives.

The olive plantations and vineyards are thin and few, and confined mostly to the northern part, upon and under the Mount of Olives. The valley deepens and widens in its progress southward—save that it somewhat narrows at about the middle part, where occur those old sepulchral monuments of which Lamartine speaks. Nor are these the sole memorials of the dead. The sides of the valley, particularly towards this middle portion, are almost paved with black and white sepulchral stones—thousands and tens of thousands,—for this is the place where, three thousand years ago, the Jew buried his dead under the shadow of his Temple; and ever since—because this is holy ground, and because it is held that men shall, in this vale, rise at the last day to honour or shame—the Jew journeys in his old age from the uttermost parts of the earth, that when he dies his bones may be laid in this valley of his fathers' sepulchres.

The famous brook Kedron, which traverses the length of this valley, is a mere winter-torrent, quite dry for the greater part of the year.

The valley to the south, under Mount Zion, and between it and the, so called, Hill of Evil Council,<sup>a</sup> is most probably that to which the Scripture gives the name of Ben-Hinnom, or, in the Greek, Ge-Hennom—"The valley of the son of Hinnom." Who this Hinnom was is not known. This valley is rather more than half a mile long. "Its breadth is about fifty yards, and its depth perhaps twenty, measuring from the bottom to the highest part of Mount Zion."<sup>b</sup> It is traversed by the channel of a winter-torrent, which begins in the western valley and ends in the bed of the Kedron. The valley is wider at the eastern end, which joins the valley of Jehoshaphat, than at the western, which joins the valley of Gihon. This ravine formed part of the boundary between the tribes of Judah and Benjamin. Both its sides are cut down perpendicularly, as if it had served for a quarry to the ancient city,—and this circumstance increases its resemblance to a trench or ditch; and practically it did serve as a fosse on that side to "the city of David" on Mount Zion. The bottom is rock covered with a thin sprinkling of earth washed down from the higher ground. Being comparatively well watered, it was anciently rich in gardens and groves, amid which the apostate Israelites, in the days of the monarchy, celebrated the horrid rites of Moloch, not unfrequently attended with the offering of human victims in sacrifice to his grim idol. Hence its frequent mention by the prophets in their denunciations of the "dark idolatries of alienated Judah;" and in these it sometimes bears the name of Tophet, from the tabrets (called in Hebrew *toph*) with which the cries of the victims were drowned. After the captivity had extinguished the propensity of the Jews to idolatry, the memories connected with this spot caused it to be regarded with abhorrence; and, following the example of king Josiah,<sup>c</sup> it was appropriated to the vilest uses. Every kind of filth was thrown into it, as well as the carcasses of animals and the dead bodies of malefactors. But, to obviate the evil consequences which might be expected to ensue if such a mass of corruptible matter were left to putrefy, fires were constantly kept up in the valley to reduce the whole to ashes. Hence the metaphor which, in the New Testament and in the Jewish writings, transfers the name of Gehenna to that other place, "where the worm dieth not, and the fire is not quenched." On the farther side of this valley, towards the south-east, is the spot supposed, with very good reason, to be "Aceldama," the field of blood, which was bought with the price of the treason of Judas for "a field to bury strangers in."<sup>d</sup> The rocky and precipitous hill-side is here and elsewhere pierced with tombs of various forms and dimensions. The soil of Aceldama has had the reputation of reducing to dust within twenty-four hours the bodies deposited in it; and it was, if it be not still, believed, that it did not lose its decomposing properties even when carried to a distance.<sup>e</sup>

<sup>a</sup> Because the house of Caiaphas, where the chief-priests and the scribes took council against Christ, is supposed to have stood upon the top of the hill. Very unlikely.

<sup>b</sup> Robinson; who is probably right, although his estimate of the breadth is much under that of Eugene Roger, who says,—  
"Laquelle peut avoir mil cinq cents pas de longueur d'orient à l'occident, et trois à quatre cents de largeur."

<sup>c</sup> 2 Kings, xxiii. 10.

<sup>d</sup> Matt. xxvii. 3-8.

<sup>e</sup> "By order of the Empress Helena, 270 ship-loads of this soil were transported to Rome, and deposited in the Campo Santo near the Vatican, where it was wont to reject the bodies of the Romans, and only consume those of strangers! The interior of the Campo Santo at Pisa is also filled with this soil, where I saw it, two years ago, producing a rank crop of *alopecurus* and other grasses."—Monro, ii. 204.

These deep valleys on the east and south must always have restricted the extent of Jerusalem, in those quarters, within its present limits. But this is not the case on the west; for the western valley, which is called the valley of Gihon, is so shallow, that, according to Mr. Elliot, there is no palpable absurdity in supposing that it may have been included, with a portion of the opposite hill, in the ancient Jerusalem. On arriving on the verge of this valley, opposite Jerusalem, Lamartine says, "A vacant space of some hundred paces alone lay between us and the gate of Bethlehem. This area, barren, sloping, and waste, resembling the glacis which at a certain distance surrounds the fortified towns of Europe, opened to the right, and descended with a gentle declivity into a narrow valley." The valley is, however, considerably wider in its southern part than at this place.

Having completed this brief survey of the valleys which surround the humbled "city of the Great King," we may now proceed to explore the other valleys and the plains of Judea.

The road from Jerusalem to Bethlehem lies through a continued valley upwards of six miles in length, and of very considerable breadth.<sup>a</sup> The entrance to it is south-west of Jerusalem from the valley of Gihon. All the old travellers identify it with the VALLEY OF REPHAIM so often mentioned in the Scriptures, and which is there celebrated for its fertility and for the victory of David over the Philistines.<sup>b</sup> We have no doubt this identification is correct, seeing that the Philistines then held possession of Bethlehem. Hence we are surprised to see that recent travellers suppose the Valley of Rephaim to be the same as that of Gihon on the west of Jerusalem. This mistake may have originated from some travellers misunderstanding the indications given to them; supposing, probably, that their guides indicated that as the Valley of Rephaim, when they really intended to point out the commencement of that valley which now engages our attention.

This valley is not deep. It might perhaps be more distinctive to describe it as a depressed plain, bounded on either hand by low hills. Its present appearance of fertility supports its ancient fame; and in it are corn-fields, vineyards, olive-grounds, and orchards of various kinds of fruits. The interest of this valley arises from the certainty that it was often traversed and its natural features noted by some of the most venerable personages of the sacred history in their journeys from Jerusalem to Bethlehem or to Hebron. The road is replete with pilgrim curiosities of the usual description, in few of which the instructed mind will be much interested. First, about two miles from Jerusalem, we observe to the right a small eminence in which are the ruins of some large building which we are told was the house of the aged Simeon, who, in the Temple, took the infant Jesus in his arms. About midway between Jerusalem and Bethlehem was the largest and most lofty terebinth-tree which Rauwolff had ever seen. It was too conspicuous and noble an object not to be sanctified by some tradition; and, accordingly, we are told that beneath the shade which this tree offered, the Virgin Mary was wont to rest on her journeys between Bethlehem and Jerusalem; and some marvellous instances are given of the respect and attention which the docile tree evinced. It was burnt down by the Arabs a few years after Rauwolff saw it, and an olive-tree afterwards supplied its place.<sup>c</sup> Six or seven hundred paces from this is a fine cistern, made apparently for watering the flocks pastured in the neighbouring campaigns. It is called the cistern of the kings, because, as the story runs, the Magi, while watering their camels here, saw anew the star which guided them to the obscure birth-place of Christ in Bethlehem. Near this is the monastery of St. Elias, where there is a rock on which we are told the prophet lay down to sleep when he fled from Jezebel, and on which he left the impress of his figure! Another building in ruins, about 500 paces beyond, is announced as the house of the prophet Habakkuk,

<sup>a</sup> The only estimate of its breadth we have met with is that of Morison, who calls it a league wide. But we see cause to think this much too high an estimate. Accuracy of measurements is not among the many great merits of Morison as a traveller.

<sup>b</sup> 2 Sam. xxiii. 13; 1 Chron. xi. 15; xiv. 8-17; Isa. xvii. 5. Joseph. 'Antiq.' vii. 4.

<sup>c</sup> Morison says that, when the old terebinth-tree was destroyed, many attempts were made to plant another of the same species, but without success, as none of the young terebinths could, with any care, be made to take root. But the olive-tree grew spontaneously on the spot.

or, more likely, as Morison suggests, of a church built upon its alleged site. Not far from this is a cultivable ground, commonly called the Pea-field: it was formerly usual to find there a quantity of small rounded stones, in the form of chick-peas, concerning which we are told by a tradition, which Morison allows we are at liberty to admit or to reject, that a whole crop of this legume was turned to stone, because the churlish proprietor refused a handful to the Virgin Mary, and jeeringly told her they were not peas but stones.<sup>a</sup> In the same neighbourhood, a ruined tower, with some other buildings, upon a height, is pointed out as the tower of Edar or of Jacob; and here also occurs Rachel's Sepulchre, which has been noticed in the historical portion of this work.<sup>a</sup> About 1200 paces from this is seen on the right hand a large and deep fosse of a round shape, which, as traditions tell, was dug to receive the bodies of Sennacherib's host, which was encamped in this valley when slain—all in one night—by the angel of the Lord. Rauwolff mentions another ditch, higher up the valley, employed for the same purpose, but the situation of which he does not clearly indicate. That great pits were dug on the occasion indicated is more than likely; but they were dug to be filled again, and would not now be recognizable as ditches. Even sensible travellers have forgotten this.<sup>b</sup>

We have enumerated the objects in the short route of two hours from Jerusalem to Bethlehem, partly that the reader may have before him some specimens of the ample fare which was provided for the curiosity and enthusiasm of pilgrims to the Holy Land.

At a short distance to the south of Bethlehem is a fine and rather extensive plain covered with rich pasture, where David, no doubt, often fed the flocks of his father. One part of this plain, enclosed by low hills planted with olive-trees and partly cultivated, is called the Shepherds' Field, from a tradition that it was in this place the shepherds of Bethlehem were watching their flocks by night, when the angel proclaimed to them the "glad tidings" that in "the city of David" "a Saviour" had then been born; and where a multitude of "the heavenly host" exulted in the manifestation of *glory* to God, *peace* to the earth, and *good-will* to man.

About one hour's journey to the south of Bethlehem is a small valley which offers the traditional and very probable site of one of Solomon's pleasure-grounds, where he made him "gardens, and orchards, and pools of water." The reservoirs at the south end of this valley, called the Pools of Solomon, still engage the attention of travellers, and will be duly noticed in a more suitable place. Below these runs another valley, narrow and rocky, about two miles in length, terminating in a close ravine. The mountains which enclose it are high, and run straight as palisades. The cultivable soil in the bottom of the valley varies in width, but rarely exceeds a hundred yards, and the rocks rise abruptly on either side. At something more than a quarter of a mile occurs the lower portion of a quadrangular building of coarse stone work, thirty feet by twenty-one, the walls of which are six feet thick, and a small pipe, three inches in diameter, passes out on the side next the pools; but no other passage out can be discovered. A short distance beyond it the valley is set with fig-trees, vines, and olives, the proprietors of which inhabit a few huts on the left, where are also some ruined arches of stone. From the foot of the rock beneath these ruins issues a transparent spring, which, passing onward in a copious stream, winds through the valley, irrigating and fertilizing in its course, while the rock over its source is cut into various forms.

This valley is supposed to have been the site of the gardens, and the enclosed fountain and spring to be those alluded to by Solomon in the text, "A garden enclosed is my sister, my spouse: a spring shut up, a fountain sealed."<sup>c</sup> Hence the valley bears the name of *Hortus Conclusus*. Maundrell thinks the pools before referred to were very likely made by Solomon; "but for the gardens," he says, "one may safely affirm that, if Solomon made them in the rocky ground which is now assigned for them, he demonstrated greater power and wealth in

<sup>a</sup> Page 103.

<sup>b</sup> Quaresm. *Elucid.* T. S. ii. 589-614; Rauwolff, 373; Fürer, 64; De Breves, 170; Zuallart, iii. 15; Cotovic, cap. 10; Nau, iv. 10; Morison, ii. 26; Maundrell, 86.

<sup>c</sup> Solomon's Song, iv. 12.

finishing his design than he did wisdom in choosing the place for it." But Hasselquist, a better judge, says, "The place will well admit that Solomon might have formed a garden here, though it is not by nature an agreeable situation, being in a bottom; but perhaps this great prince might choose to improve nature by art, as many other potentates have done." The fact is, that a valley kept always verdant by the singular abundance of water, afforded peculiar advantages in this country for a pleasure-ground. Mariti says, "Nature has still preserved its original fertility to the valley of *Hortus Conclusus*. Although but little cultivated, the soil still produces a tolerable quantity of cotton and various kinds of grain. There are also seen fine plantations of fruit-trees, affording the most juicy fruits of the country. Various flowers and many fragrant plants grow there naturally at all seasons—among which are thyme, rosemary, marjoram, sage, absinthium, persil, rue, ranunculuses, and anemones." De Breves, long before, bore similar testimony, though he was there in the very unfavourable month of July: he describes the valley as "always green;" and, besides the plants just named, cultivated by Nature's own kindly hand, he adds oranges, citrons, and pomegranates to the fruits which grow there. Zuallart says that several species of rare plants were found in the valley, and seems to insinuate the probability that they had been propagated from exotic plants which Solomon introduced into his gardens.<sup>a</sup>

Having come so far in this line of road, we will follow it as far as Hebron, in order to reach the VALLEY OF MAMRE, near that town. From the Pools of Solomon to Hebron, the road lies over a succession of barren hills, between which we do not find any noticeable valleys. The vicinity of Hebron renders the identification of the Vale of Mamre unquestionable. It has been slightly noticed in our history of the patriarchs, to whom it formed a favourite place of encampment, and which contained the sepulchre in which their bones lay. This broad and winding valley extends for some miles, and is bounded on all sides, and apparently shut in by stony mountains. The soil is good; and offers much cultivation of the olive and the vine, while the uncultivated parts exhibit rich pastures. It contains a terebinth-tree, which is held in high honour by all the inhabitants of Hebron, especially by the Jews, in the belief that the tent of Abraham was shaded by its boughs.<sup>b</sup>

The notice which has been taken of the valleys on the line of road between Jerusalem and Hebron will incidentally have the use of supplying points which will serve to indicate the bearings of such other valleys, to the east or west of this line, as may now require our attention.

We may now return to the neighbourhood of Jerusalem, and again walk southward from thence to explore the valleys which lie to the east or west of the central line to Hebron, which has now been described. The very important portion of Judah which lies between this central line and the coast has been very partially explored hitherto. Some travellers of the sixteenth and seventeenth centuries did indeed traverse it by tracks which have not been followed by later travellers, except in the instance of Professor Robinson and the Rev. Eli Smith, the results of whose researches have only as yet been communicated to the public in a very slight sketch.

The only valley in this quarter to which the older travellers call attention, happens also to be the only one of which the Scripture takes notice. This is the VALE OF SOREK, so celebrated for its large clusters of fine grapes, and for the excellent wine which those grapes afforded. It is the channel of a winter-torrent, which commences behind the southern hills of that Wilderness of St. John which we lately noticed. From this, which is about five miles west of Jerusalem, the valley stretches about four miles in a direction south by west, after which it extends away westward to the coast, where the torrent which passes through it discharges its waters (when it has any) into the sea, below Ashdod. The whole of this course is about forty miles. This may explain the discrepancy between different travellers; for, while some apply the name of the Vale of Sorek to this whole extent, others confine it to the shorter

<sup>a</sup> Monro, ii. 256; De Breves, 180; Zuallart, iv. 3; Nau, 444; Maundrell, 89; Mariti, ii. 368; Hasselquist, 145.

<sup>b</sup> Elliot, ii. 499; Stephens, ii. 140; Lindsay, ii. 50. About the terebinth-tree of Mamre, see pp. 36, 51.



commencing portion, before the westward turn is taken. It is only of this part that we have any satisfactory description.

One principal reason of the interest which the old travellers took in this valley was from the belief that it was not only the valley of Sorek so celebrated for its wine grapes, but also that of Eshcol, from which the spies took the enormous vine cluster which they bore to Moses.<sup>a</sup> Or rather, they think the valley was named Sorek, and the brook which flowed through it Eshcol. As the valley from which the spies took the cluster of grapes derived its name from that circumstance, it might certainly have two names—its old one, and that which it thus acquired. Others have rather chosen to find the valley of Eshcol in that which contains the spring called the Fountain of St. Philip—at which the deacon of that name is supposed, but we imagine very erroneously, to have baptised the Ethiopian eunuch. *This* valley opens into that of Sorek, just at the point where the latter begins to bend decidedly westward. We have ourselves no very clear opinion about the situation of the Scriptural brook of Eshcol. Since one of Abraham's Amoritish friends, dwelling in the valley of Mamre, near Hebron, bore this name of Eshcol, it has generally of late years been concluded that the valley so called took its name from him, and is in fact only another name for the valley of Mamre. The testimony of Jerome, which is of great weight in such a question, is favourable to this opinion, as is also the southward situation of that valley.<sup>b</sup> But, on the other hand, the sacred text expressly says, not that the brook Eshcol was so called from any connection with the Amoritish chief, but that "the place was called the brook Eshcol because of the cluster of grapes which the children of Israel cut down from thence." But we may leave this question, and return to the valley of Sorek,<sup>c</sup> which might certainly claim to be regarded as that through which the brook of Eshcol flowed, if the great superiority of its wines might be taken as evidence in its favour.

Understood in the more limited sense which we have defined, the valley of Sorek is rather deep, and moderately broad. The mountains which enclose it on the west present only the appearance of scarpèd rocks. Those on the opposite side are lower, but covered with verdure. The valley is, or was down to recent times, cultivated unusually well—partly as arable land, and partly in vineyards, besides plantations of the fig-tree and the olive. The vines of this valley are still the finest, and the wine made from them the best in the Holy Land. The supposition that this was the vale in which the spies "cut down a branch with one cluster of grapes, and bare it between them upon a staff," gives interest to the statement of Eugene Roger, that in the year 1633 he found here a cluster of white grapes weighing twenty-four French pounds;<sup>d</sup> and he adds that it was quite ordinary to find them from six or eight to ten or twelve (French) pounds weight. The wine made from these grapes was that which was supplied to visitors at the convent of St. John, and is declared by Morison and others to be one of the best in the Holy Land. It is a white wine; and, says the traveller just named, "it was so delicate and so delicious, that, in tasting it, my conscience secretly reproached me for so badly imitating the great Baptist, who in this very place [the wilderness of St. John] abstained from all wine and strong drink."<sup>e</sup>

Seeing that the valley, which is thus noticed in its commencement, passes seaward at no great distance from Askelon, it seems very possible that the wine which the Scriptures celebrate as the "wine of Sorek" may be the same of which the classical ancients make honourable mention as the wine of Askelon. The bed of the winter torrent, the commencing portion of which we have described, crosses at its other extremity the plain of the coast at between four and five miles to the north of Askelon, and travellers pass it with little further remark than "We crossed a broad stone bridge, which was over the bed of a river, with stagnant water in several places." This was in April.<sup>f</sup>

<sup>a</sup> Num. xiii. 23, 24.

<sup>b</sup> Epitaph. Paulæ, fol. 59, G. H.

<sup>c</sup> All the Scriptural encomiums on the vine and the wine of Sorek are lost to the English reader, through our translators having understood the word as an appellative rather than a proper name, and accordingly translated "choice vine," "noble vine," as in Gen. xlix. 2; Isa. v. 2; Jer. ii. 21, &c.

<sup>d</sup> Twenty-six lbs. 7 ozs. avoirdupois.

<sup>e</sup> Luke i. 15.

<sup>f</sup> Roger, 182; Morison, 492; Thevenot, 203; Quaresm. Elucid. T. S. ii. 696; Richardson, ii. 205.

We shall now look to the valleys which lie between the Dead Sea and the centre of Judea.

The Desert of St. Saba might be mentioned either among mountains or valleys. We place it here, among the latter, because the mountains which give it character form the sides of the valley or ravine, at the bottom of which the torrent of Kedron makes its way towards the Dead Sea. As Dr. Pococke's account of it involves an account of the valley of Kedron from Jerusalem to this place, we give it the preference. The older and later travellers usually visit it from Bethlehem. The route by the valley of Kedron offers, as might be expected, a more direct route to the Dead Sea than that by the plain of Jericho.

"We went to the south-east, along the deep and narrow valley in which the brook Kedron runs: it has high rocky hills on each side, which are shaped into terraces, and doubtless produced formerly both corn and wine: some of them are cultivated even at this time. . . . About six miles from Jerusalem we ascended a hill to the south, from which we had a prospect of Zion, the Mount of Olives, and Bethlehem. We then went about an hour on the hills, and descending a little to the south, came to a lower ground, where we had the first view of St. Saba. Then turning east, in less than a mile we arrived at the convent, which is situated, in a very extraordinary manner, on the high rocks over the brook Kedron. There was a great number of grottoes about it, supposed to have been the retreats of hermits. The monastic and hermit's life was instituted here in the fourth century by St. Saba. They say that there have been 10,000 recluses here at one time, and some writers affirm that, in St. Saba's time, there were 14,000. The monks of the convent never eat flesh; and they have such privileges that no Mohammedan can enter the convent, under penalty of paying 500 dollars to the mosque of the Temple of Solomon. St. John Damascenus, Euphemius, and the monk Cyril of Jerusalem, lived in this retirement, which is computed to be equally distant from Jerusalem, Bethlehem, and the Dead Sea; that is, about three hours from each of them."

This learned traveller seems not to have been at the bottom of the valley, and consequently was not aware of the large and deep cavern at the foot of the mountain, in which rises a spring of water, *said* to have been miraculously produced by St. Saba for the benefit of the monastery which he founded. This place has not been much visited by the old Catholic pilgrims, because the monastery is in the hands of the Greek "schismatics," nor by those of recent date, because it does not lie on any of the more frequented roads.

The old travellers who visited St. Saba generally included what they called the DESERT OF ENGEDDI in their route. In a former inquiry after Engeddi we satisfied ourselves, by reasoning, that it must have lain nearer to the southern than to the northern extremity of the Dead Sea.\* Yet we must confess that the accounts which we have since met with of the received Engeddi, show the name to have been so judiciously appropriated with reference to many circumstances of agreement with the scriptural notices of the place, that we are not sure we should have adhered to our former conclusion against it, were it not that Professor Robinson has since discovered the very name of Ain Jiddi as nearly as may be in the situation we indicated. But although travellers are thus shown to be wrong in the appropriation of the name of Engeddi to the locality which they describe, the place itself is a reality which requires our notice.

Several of the travellers of the sixteenth and seventeenth centuries have very satisfactory accounts of this place; but that which Mr. Monro has given is better than any of them, and will be more acceptable to the reader:—

"At one hour (east from Bethlehem) we reached the foot of the mountain, upon the eastern side of which the "Cave of Engeddi" is situated. The ascent is not difficult, although marked by no paths; and the mountains are of the loftiest in the neighbourhood, presenting a strong and well-chosen "hold." Upon the summit are the foundations of a thick wall composed of large stones, enclosing a quadrangular space in which is a reservoir for water, and on the western side of it the ground is raised in a semicircular form. A cistern, no doubt, has existed here from the earliest times, at which the flocks were wont to be watered, and which gave the name to the place, since *Engeddi* in Hebrew signifies the *kid's fountain*. The cave

\* 'Pictorial Bible,' note on 1 Sam. xxiv. 1.

a little below its summit had its entrance, four and a half feet high, and somewhat wider, carefully closed with stones by the Arabs previous to their retiring to the desert.

“ Having pulled down the wall, I found the length of the interior to be about sixty feet, and the guide said that its depth was nearly the same ; but the back part was so entirely filled up with chaff, that not more than twenty-five feet were left vacant. In the highest part it was eight feet, but in most places less than five. Although a natural cavern, it seems to have had its surface smoothed by cutting. This mountain stands upon the border of the desert, commanding a view of the Dead Sea to the south-east.

“ That the spot is entitled to the name it bears appears probable from the coincidence of its physical circumstances with the scriptural narration of the transaction with which it is connected.<sup>a</sup> ‘ Saul came to the sheep-cotes by the way, where was a cave.’ This could not have been actually in the wilderness, where is no vegetation.<sup>b</sup> Besides which, he was on the way thither, he had not yet reached it. It is remarkable that the nature of the ground is precisely the same at the present day. While the neighbouring district on three sides is arable, this mountain, situated within a mile of the wilderness,<sup>c</sup> is covered with grass ; and near the top of it are caves with small stone enclosures in front, serving as pens or ‘ sheep-cotes’ for the flocks. Near the cave itself a flock of sheep and goats were feeding.”<sup>d</sup>

Separately from any question about Engeddi, this is one interesting specimen of the numerous grottoes in Palestine. That which has been described is not the only one in the neighbourhood. It is the principal of them ; but there are many others which, like this, serve as retreats to the Arabs and to the flocks which they feed.

As Mr. Monro’s account is rather limited, it is proper to observe that what the old travellers understood as the desert of Engeddi is a district of some extent, rendered agreeable by the diversified aspect of its mountains, and by the richness of its well-watered valleys. The scriptural Engeddi was celebrated for its vineyards.<sup>e</sup> The place now described has no such celebrity. The hills and valleys are entirely uncultivated ; and only some wild olives and other trees are now seen.<sup>f</sup>

In taking a view of the country to the south of Hebron down to the borders of the desert, we must avail ourselves exclusively of the most recent authorities. The information we have lately acquired concerning this very interesting portion of Palestine is one of the benefits which we have incidentally derived from the discovery of Petra by Burckhardt. Before that time, those travellers whose views embraced Egypt and Sinai as well as Palestine, proceeded first to Cairo, then went to Sinai, and returned to Cairo, after which they either took the caravan route from Cairo to Gaza, or else proceeded to the coast and embarked for Jaffa. But when Petra had attracted attention, and travellers in visiting that place from Akaba were already more than half way to Palestine, it began to be felt absurd to return to Egypt in order to proceed from thence to the Holy Land. Mr. Stephens, followed by Lord Lindsay, struck boldly across from Petra, through the desert and the south of Judea to Hebron ; and the practicability of the route being thus established, travellers already in Palestine have not hesitated to proceed from Hebron to Petra. This has been done by Count de Bertou and Professor Robinson. The latter gentleman, with his companion Mr. Smith, also explored another tract of this interesting district in travelling strait from Akaba to Hebron, across the desert which intervenes between Sinai and Palestine, and through the southernmost portion of the latter country. He was not, however, as he supposes, the first modern traveller to cross this desert. Mr. Arundale had some years before (in 1833) crossed its *entire* length in the journey which he made direct from Sinai to Gaza, without turning aside to Akaba on the one hand or to Suez on the other. But, unhappily, this gentleman does not appear from his book to have been aware that he was pursuing a route which is not known to have been for ages travelled by European feet ; and hence, his particular attention not being excited, his information conveys little instruction to us.

It may be useful to state the routes or parts of routes which are peculiar or common to the

<sup>a</sup> 1 Sam. xxiv.

<sup>b</sup> This is not true, whether taken as a general or, with reference to the present case, a particular observation.

<sup>c</sup> What wilderness?

<sup>d</sup> Monro, ii. 259-261.

<sup>e</sup> Sol. Song, i. 14.

<sup>f</sup> Marison, 489 ; Nau, 446.

several travellers we have named, as enabling the reader to enter the better into those passages in which their authority is adduced.

The route of Mr. Stephens and of Lord Lindsay was the same all the way from Sinai to Hebron. The return journey of Count de Bertou, from Akaba to Hebron by Petra, was also the same as theirs between the same points.

The route of Count de Bertou from Hebron to Akaba is two-thirds of it new. Its commencing portion, from Hebron to the end of the Dead Sea, coincides *partly* with the preceding route, and wholly with that of Irby and Mangles, and Dr. Robinson, who regrets that M. de Bertou had anticipated him, by three or four weeks, on this route, not knowing that both were anticipated twenty years ago by Irby and Mangles, and before them by Seetzen; while its terminating portion, on the approach to Akaba, is twenty-five miles, included in the usual route from Akaba to Petra.

Although Dr. Robinson was not the first to cross the desert of El Tyh, his route across it, from Akaba to Hebron, is new, with the exception of about eighteen miles between the points where Mr. Arundale's route from Sinai joined this, and afterwards left it to proceed to Gaza.

All Mr. Arundale's route from Sinai to Gaza is new, with the same exception which has just been stated, and in which his route coincided with that of Dr. Robinson.

Departing from Hebron, we will trace such particulars, on these several lines of route, as come within the scope of our present chapter. We shall, however, stop when we reach the skirts of the desert; which, as it happens, coincides, as nearly as possible, with the line which we gave to the southern border of Palestine. The desert beyond, we reserve for the general notice with which this chapter will terminate.

Our first route traverses the heart of the southward country, from Hebron to Wady Ruheibeh, through which Professor Robinson is our sole guide. But, for the sake of uniformity, we reverse the direction which he took, which was *to Hebron not from it*.

The valley of Mamre has already been noticed, as well as the claim which it offers to be regarded as the Scriptural Eshcol. This claim is supported by the generally fertile character of the district about and immediately to the south of Hebron. "We could not but notice," says our guide, "the fertility of the surrounding valleys, full of fields of grain, and of vineyards, yielding the finest and largest clusters of all Palestine. Yet, to a careless observer, the country in general can only appear sterile; for the limestone rocks everywhere come out upon the surface, and are strewn over it in large masses, to such a degree that a more stony or rocky region is rarely to be seen."

This sort of country, but with diminishing cultivation, continues about twenty miles, when the hill country of Judea terminates, and we have before us a wide open plain, covered with grass, and where fields of wheat and barley are seen all around. It was probably for the sake of the pastures, by this and other plains and valleys in this quarter, that so much preference was given to it by the Hebrew patriarchs. Indeed, this present plain extends southward to the borders of the Wady es-Seba, on which, at the point where the road crosses, Dr. Robinson had the happiness to discover the site of the patriarchal Beersheba, as mentioned in a preceding page (90). Beyond this, the hills are higher than travellers coming from the south have seen since leaving the Sinai peninsula. Beyond these higher hills extends for many miles an "open rolling country:" all around are swelling hills covered, in ordinary seasons, with grass and rich pasturage. After this the character of the country becomes changed to that of an elevated plateau; and beyond it another plateau [of lower level, we presume] extends all the way to our limit, Wady Ruheibeh. This is called, by Professor Robinson, "a fine plain, covered with grass, and herbs, and bushes; in crossing which our ears were regaled with the carols of the lark and the song of the nightingale, all indicating our approach [coming from the south] to a more fertile region." The learned traveller also remarks that the Arabic name Ruheibeh may suggest the Rehoboth of Scripture—the name of one of Isaac's wells; but, as he also observes, other circumstances do not correspond.

These facts are important and interesting, as showing the existence of a large tract of naturally fine country, partly cultivable, and everywhere abounding in rich pastures. This must

have been a valuable part of the Hebrew territory; but the greater part of it was either not assigned to the Hebrews at all, or set down only as so much unprofitable desert, until we were enabled by analogy to estimate its true value, and to assign to it a character similar to that which actual observation has since shown it to bear.

Now, returning to Hebron, we will travel from thence, south by east, to the borders of Wady Araba. Count de Bertou must be our chief guide; for, although Mr. Stephens and Lord Lindsay have some important observations, there is, as usual, a want of that precision which gives value to the remarks of a man of science, and in the absence of which it is often difficult to allocate observations entitled, in themselves, to much consideration.

As the travellers whom we have named all advanced towards Hebron northward from Wady Araba, it may be well to give the same direction to the statement collected from their observations.

As the point at which they left the Wady Araba is too far southward, we will take a point on this route nearly on the same line with the Wady Ruheibeh of the more western route, and distant forty-four miles therefrom. Let this be Wady el Kofeikifeh, which is about eighteen miles from the point at which we leave the Wady Araba.

For some miles above and below this point, a range of low hills, bearing the same name, intervene between Wady Araba and the road which we traverse.

Before reaching the point where the roads to Hebron and Gaza diverge, we pass, about three miles to the left, an isolated small hill, named by the guides Kâdeseh, or El Madaruh, a remarkable name, which suggests to Count de Bertou whether it may not be the Kadesh of the Scriptures. This must be the same site which Lord Lindsay writes so differently as Hussaya Ulmedurra, and calls it a chalk hill; reporting also the Bedouin tradition that under it God crushed a guilty village. A little way beyond this brings us to the foot of Jebel Yamen (Right Hand Mountain), a range of hills which forms the termination (or, in our direction, the beginning) of the mountains of Judea in this quarter. These we enter by a deep defile called Wady Fukreh,<sup>a</sup> the mural hills on either side rising from 150 to 200 feet. On reaching the end of this valley or gorge, a steep ascent is commenced, up mountains about 1000 feet high, winding by a very rough track through a wild and rocky defile. On reaching the summit a slight descent brings us upon an elevated plain, called Atreibi,<sup>b</sup> the surface of which is composed of heavy sand, with the usual plants of the desert,—“but still,” says Lord Lindsay, “a garden compared with the waste we had recently traversed.” In fact, traces of something more than desert vegetation begin to appear as we advance into the plain; and beyond Wady Kurnib<sup>c</sup> the country assumes the appearance of a down rather than a desert, being thickly covered with grass and shrubs.

Travellers march on for six hours from Wady Kurnib without finding much to engage their attention. Then they reach a place called El Melek,<sup>d</sup> which is described as being situated in a *very extensive plain*, called El Foura. Here Lord Lindsay's party “were surprised at finding two large and deep wells, beautifully built of hewn stone: the uppermost course, and about a dozen troughs for watering cattle disposed round them, of a coarse white marble: they were evidently coeval with the Romans. Quite a patriarchal scene presented itself as we drew near to the wells. The Bedouins were watering their flocks,—two men at each well letting down the skins, and pulling them up again with almost ferocious haste, and with quick savage shouts, and then emptying them into the troughs: the sheperdesses stood aloof, and veiled their faces, seeing the strange *howagis*. The several flocks, coming up and retiring in the exactest order, were a beautiful sight.”

The same neighbourhood gives M. de Bertou occasion to remark,—“In summer each

<sup>a</sup> Lord Lindsay must have misunderstood his guides. He supposed they were telling him the name of the mountains, when they actually told him the valley; for this word is doubtless that which he represents by Jebel *Asfur*. These and other differences of orthography which we have occasionally to notice—and which are sometimes very amusing—may serve to indicate to the reader a circumstance by which geographical inquiry and comparison are often grievously perplexed.

<sup>b</sup> By Lord Lindsay. M. de Bertou, whose names are more trustworthy, does not name it.

<sup>c</sup> Lord Lindsay has it Kournou.

<sup>d</sup> So Lord Lindsay. The place El Milh, incidentally named by M. de Bertou, is, doubtless, the same.

camp seeks out fresh pasturage for its flocks and herds, which forcibly recalled to my mind that Esau and Jacob separated from each other for the same purpose. At every step in this country one finds a striking resemblance between the account given in the Bible of the patriarchs of old and the manners and customs of its present inhabitants—NOTHING HAS CHANGED.”

A range of stony hills, called *Jebel el Gheretain*,<sup>a</sup> bound the plain of El Foura on the north; and, these being passed, numerous ruined garden-walls and terraces warn us of our entry among the ancient cultivation of Judea. As we proceed, we observe occasional patches of ground reclaimed from the desert, and under actual cultivation; and, ere long, the whole valley below us becomes green with corn, field descending below field, divided by regular terraces. This cultivation belongs to the village of Semuah.<sup>b</sup> This is but ten miles from Hebron; and all the way we ride through fields of corn, between rounded hills, which are covered to their very tops with bushes of the prickly oak.

One general observation results from the brief survey of the two last routes, which is, that cultivation and pasturage cease the soonest on the south-eastern route, being that to the extremity of the Dead Sea and to the Wady Araba.<sup>c</sup>

In stating the observations made by M. de Bertou in his *southward* route from Hebron to Akaba, we took up that route as it entered the Ghor at the southern extremity of the Dead Sea, omitting the details which he gives of his route from Hebron to that point. Part of that route coincides with that which has just engaged our attention. But, coming from Hebron, the route in question leaves this at about El Melek, and strikes off east-south-east to the end of the Dead Sea. The distance does not exceed twenty miles; but is of very striking interest.

The journey lies, at first, over an undulating plain, with the grass dried up (in April) for want of water. Proceeding, a glimpse of the Dead Sea is first obtained at the outlet of a deep valley on the left. The ground soon begins to descend rapidly, and is covered with salt, and occasionally flints, presenting an aspect of the most complete desolation. When we have made half our way, the road takes a more easterly direction, following the dry bed of a torrent, which in winter discharges its stream into the back-water of the lake, near its extremity. This torrent bed is called Wady Zoarah.<sup>d</sup> As we advance in this valley, tamarisks and acacias become abundant, and a fine view of the Arabian mountains opens in the distance; and, ultimately, at the foot of the descent, the waters of the Wady Zoarah spread out over a plain, which is called by the Arabs *El Nafleh*,<sup>e</sup> from the quantity of shrubs of that name with which it is covered. In this plain the route continues for a short distance parallel to the lake, and within 500 yards of its shore, till we reach the Ghor, or plain to the south of the Dead Sea, at which point we took up the route on a former occasion, and therefore leave it now.

Seeing that we were disposed to look for the cave of Engeddi in this quarter, it is interesting to find here quite as remarkable a cave as that, towards the other extremity of the lake, to which the name has long been assigned. M. de Bertou, passing along this plain, with the Dead Sea on his left, and the hills from which he had descended on his right, says,—“In the limestone hills on our right is a grotto named Magharat Esdúm (Sádúm), whence gushes a salt stream. The Arabs say that the cave may be followed for some miles.”

The tract which has thus briefly been characterised, together with the salt plain south of the Asphaltic Lake, forms the scene of which M. de Bertou speaks in these memorable words, which we can neither omit nor abridge:—

“In attempting to describe the scenes which we had yesterday beheld, I feel the utter in-

<sup>a</sup> Lindsay. Not named by De Bertou.

<sup>b</sup> De Bertou. Lord Lindsay says “*Simoa* or *Simoo*,” and thinks it may be the Shema enumerated among the towns in Judea in Josh. xv. 26.

<sup>c</sup> The above particulars are mostly drawn from M. de Bertou's paper in vol. ix. pt. ii. of the ‘Geog. Journal,’ and from Lord Lindsay's ‘Letters.’ It has been found impossible to make any use of Mr. Stephens' facts, on account of the entire want of names, and his neglect of stating time and distance.

<sup>d</sup> The editor of the ‘Geog. Journal’ thinks this should, perhaps, be written Zoweirah, and warns us that the name has no relation to the Scriptural Zoar.

<sup>e</sup> This seems to be either *Medicago intertexta* or *Medicago Arabica*; we are not sure which.

adequacy of words to express my feelings. I had wandered through the Alps, the Pyrenees, and many other mountains,—I had seen countries blasted by the curse of the Almighty, the plains of Moab, and the land of Ammon,—but had seen nothing to compare with the mountains of Zoarah and Esdum. Here is desolation on the grandest scale, and beyond what the imagination of man could conceive; it must be seen—to describe it is impossible. In this striking and solemn waste, where Nature is alike destitute of vegetation and of inhabitants, man appears but an atom;—all around is enveloped in the silence of death,—not a bird, not even an insect is seen! The regular step of our camels returned a dull sound, as if the earth were hollowed beneath our feet: the monotonous chant of the camel-driver accompanied at times the step of this inhabitant of the desert, but was suddenly stopped, as if he feared to awaken nature. The sun concealed itself by thick clouds, and seemed unwilling to shine upon the land cursed by the Almighty. We saw the traces of several wolves. Everything seemed to combine to make the landscape awfully sublime.”

We now proceed to notice such characteristics of the country *east* of the river Jordan and its lakes as the object of this chapter will allow it to embrace. But, seeing that particular spots in this important part of the country are less aggrandised by historical or sacred associations than those on the western side of the river, a much less detailed survey may be sufficient: and, perhaps, the view which we can afford to take may be best exhibited in the form of a statement of the prominent characteristics of the several districts of which this region is composed.

These are the districts of Argob and Bashan, of Gilead, of the land of Moab, of the land of the Ammonites, and of the Haouran.

ARGOB AND BASHAN are allied districts, which may be placed together, as they usually are in Scripture, in which they are celebrated for their oaks and their cattle. The “bulls of Bashan” was indeed a proverbial expression for cattle in their best and proudest condition. This, of course, implies the excellence of its pastures.

We shall understand that Argob and Bashan embraced the northernmost portion of the trans-Jordanic country, from the spurs of Mount Hermon to the river Jarmouk, a few miles south of the lake of Gennesareth. It is, indeed, possible that the district may have extended somewhat to the south of this border; but, as the precise limits of this and the other provinces are uncertain, it seems best to assume the most marked geographical boundary which can be found at some point which *cannot* be far from the truth.

By Argob, as distinct from Bashan, though it was probably only a district of Bashan, we shall understand the strip of country which extends along the eastern border of the Lake of Gennesareth, and perhaps beyond it northward.

This country has been explored by Burckhardt, Major Skinner, Elliot, Baron Taylor, and others. Burckhardt traversed both the northern and southern route through this country, on the roads to Damascus. The first of these routes crosses the Jordan at Jacob's Bridge, and proceeds, by way of Kanneytra and Sasa, to the plain of Damascus. Major Skinner and Baron Taylor went from the Jordan to Damascus, and Burckhardt and Elliot from Damascus to the Jordan, by this route. The other route leads from Feik, a town near the south-eastern extremity of the Lake of Gennesareth, and proceeds to the plain of Damascus by way of Nowa and Tel Shakab. This has been travelled by Burckhardt only.

We have already found more than one occasion to intimate that the whole country east of the Jordan is elevated far above the level of that river, insomuch that the high mountains which rise before one who approaches from the west, offer but slight descents into the eastern plains when their summits are reached.

The chain of Jebel Heish<sup>a</sup> comes down from the Great Hermon, through about twenty-five miles of the tract which is now under our notice. The higher road passes over this chain, near the middle part; while the lower road passes about seven miles south from its terminating eminence of Tel Faras.

<sup>a</sup> See before, p. xli.



[Jacob's Bridge. (8)]

These hills are of very moderate elevation when we draw near them, although their positive height above the valley of the Jordan on the one hand, and above the plains of Jolan and Damascus on the other, makes them most conspicuous in the distance. The road has a gradual ascent to them in both directions. These hills are bordered by a stony district, which is about three miles broad, and in some directions more. The oaks, for which the country was so highly celebrated, make their appearance a few miles after we leave the valley of the Jordan.\* They are of the dwarf kind, and in this quarter their branches have, to a very great extent, been lopped off, and carried away for fuel. After passing the hills, the country becomes flatter and more plentifully wooded. The soil is richer, cultivable, and, to a considerable extent, cultivated. As we advance to the river Meghannye the trees increase, and the country becomes a forest; but beyond that river, we soon enter a stony plain, which continues to the fertile plain of Damascus. The river, or the border of this stony desert, probably formed the northern limit of Bashan, and, consequently, of the territory of Manasseh beyond Jordan.

The general pasturage of this tract is very good, and wherever there are streams the soil is covered with the most luxuriant herbage and grass of the brightest green. The sites of the villages are marked by clumps of poplars and olive-trees. But in this region villages are few and far between; and, says Major Skinner, "it is desolate to pass over so rich a country for many hours without seeing a habitation."

In the southern part of the country, which the mountains of Heish do not intersect, the plain is more even and open. It also appears to be less wooded—at least the presence of wood is less noticed, until near the southernmost border at the river Jarmouk. For eighteen or twenty miles east of the hills which bound the Lake of Gennesareth, the plain is wholly uncultivated, but is overgrown with a wild herb called *khob*, on which camels and oxen feed with pleasure—even in this circumstance agreeing with the ancient character of the country. The tract thus characterised must have included Argob. The soil is black or gray; but, at the distance eastward which we have indicated, the soil changes to the red colour of the earth

\* By which we mean, as always when speaking largely, the general channel of the Jordan and its lakes.



of the Haouran plains; and, as if this soil were more cultivable, as it probably is, cultivation commences with this change. The neighbourhood of Tzeil, where, on the route, this change first appears, offers also the first traces of cultivation. Beyond this the greater part of the plain is, in the season, covered with fine crops of wheat and barley; but in about fifteen miles more the plain becomes badly cultivated, and, finally, we enter upon the first stony, and then rocky district, which bounds this district upon the north and east.<sup>a</sup>

GILEAD.—The precise limits of the land of Gilead cannot be clearly defined on any data which the Scriptures offer. We know that it lay south of Bashan, and north of Moab; but, although from this we know well enough, in a general way, the situation of the district, we are not thereby assisted to the knowledge of its precise limits, as the boundaries of Bashan and of Moab are as uncertain as those of Gilead. The best course, therefore, seems to be, as before, to assume marked geographical limits, which shall certainly include the whole or greater part of the country, without undertaking to say that the true limits may not have extended beyond, or fallen within, those which we adopt. In the present instance this is the more obvious course, as the name Gilead seems to have been always rather loosely applied, and never described a political division of the country. We shall, for these reasons, consider the name of Gilead as applicable to the fine hilly country embraced between the river Jarmouk on the north, and the river Jabbok on the south. We are quite aware that the current authorities—Adrichomius, Quaresmius, Calmet, and Wells—affirm that Bashan extended, southward, to the river Jabbok. There is no authority in Scripture for this assertion; but it so happens that this statement would have been nearly true if the Jabbok had really been placed as they lay it down: for, without confounding the Jabbok with the Jarmouk, but by misplacing both, they make the Jabbok either flow into the Lake of Gennesareth! or into the Jordan, a few miles below its southern extremity—in fact, nearly where the Jarmouk ought to have been placed. Consequently, their southern frontier of Bashan, and northern of Gilead, coincides, in fact,—though in terms far from doing so,—with that which we have chosen. As the old writers knew absolutely nothing of the country beyond Jordan, their mistakes are excusable, and we should not have deemed it worth while to notice the matter, were it not that some, and those not the least intelligent, recent travellers,<sup>b</sup> adopt the modern conclusion that the Jabbok (being the Zerka) is forty or fifty miles south of the position formerly assigned it, and yet retain the old conclusion that Bashan extended to the Jabbok, whereby they make that district disproportionately large, at the expense of leaving no suitable room for Gilead, and, in fact, include under the name of Bashan the district to which the name of Gilead properly belongs.

The land of Gilead is more mountainous, and more diversified by hill and dale, than Bashan to the north, or than the land of Moab to the south. In the more southern part the mounts are of considerable height. In the northern part this district is the least interesting; in the central and eastern parts it is the most picturesque; and the southern the most grand. But, although the northern part is a dull, uninteresting country, with little wood and less beauty, the soil is very rich, and amply repays the labour of the husbandman. On the southern border there is nearly an equal want of wood, and the soil seems less productive; but a compensation is offered to the traveller in the striking character of the scenery which the mountains offer.

Advancing from the north, or north-west, to the south, or to the east, trees begin to appear, and soon thicken into clumps, and woods, and forests. The roads are beautiful, winding over hills, and through vales, or narrow rocky ravines, overhung with valonidi oak, which is the

<sup>a</sup> The above account of Argob and Bashan offers a digested comparison of the numerous particular observations in Burekhardt, Skinner, and Elliot.—Burekhardt, 281-284; 312-315; Skinner, i. 301-319; Elliot, ii. 317-327.

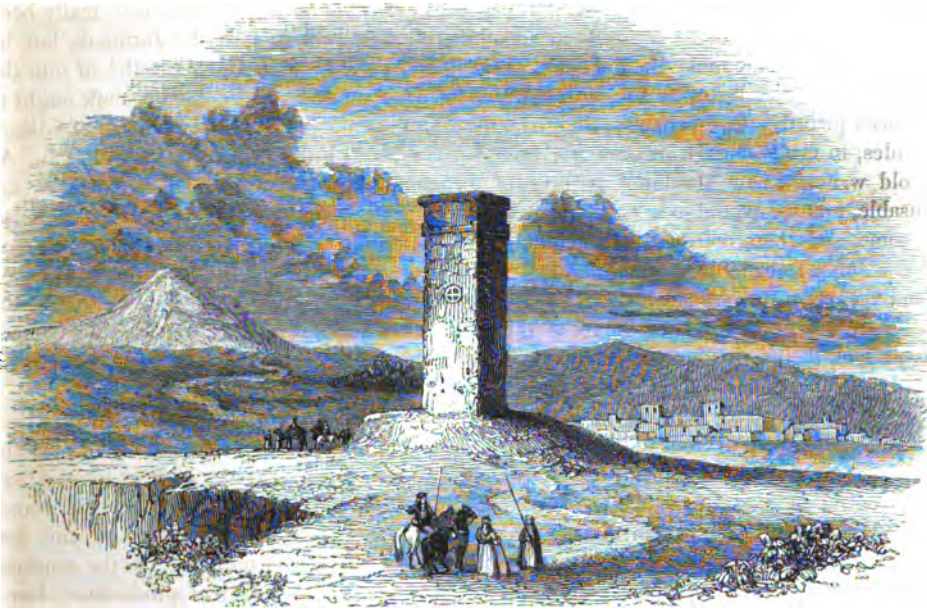
<sup>b</sup> Lord Lindsay, for instance. Of the writers on Biblical geography, the acute and judicious Reland is the only one who acted well in this matter. Distrusting the northerly position previously given to the river Jabbok, and yet knowing nothing clearly about it, he omits it in all his maps, while the principal rivers, which he does insert, the Jarmouk (Hieromax) and Arnon, are first placed by him correctly—indeed, with wonderful correctness, considering the imperfection of his data. See particularly his map, 'Facies Palestinae,' and his short chapter (xliv. of lib. i.) 'De Fluminibus Terræ Transjordanicæ,' in his admirable work, 'Palaestina ex Monumentis Veteribus Illustrata.'—Traj. Bat. 1714.

characteristic tree of this region, and which is the last to disappear in the least wooded parts. But there are many other fine trees, the names of which travellers do not specify. The beds of the streams and winter-torrents are everywhere full of the most superb oleanders.

The grandest part of the country is the most mountainous—about Jebel Adjeloun. Corn-fields appear in favourable situations. The valonidi, the prickly-oak, and the olive-tree invest the lower summits, or appear tufted among the crags. After a long ascent these disappear, saving the prickly-oak; but the arbutus, the fir, and the ash succeed them; and a larger-leaved species of valonidi supplies the place of that which we have lost. Even the noble crags which form the summits of these mountains are almost hidden among beautiful trees. The fir-trees of the utmost heights are very noble.

One of the finest and broadest valleys of Gilead is that near El Hosn, which Lord Lindsay thus describes:—

“A beautiful narrow glen ushered us into a broad valley, richly wooded to the summits of the hills with noble prickly-oaks, a few pine-trees towering over them. I never should have thought that the shrub which I had seen covering the hills at Hebron could have attained such size and beauty: yet the leaf of the largest tree is not larger than the shrubs. I saw an occasional *degub* tree, or arbutus, but the prevailing trees were oaks, prickly and broad-leaved: it was forest scenery of the noblest character—next to that of Old England, with which none I ever saw can stand comparison.”<sup>a</sup>



[View in the Land of Moab.]

**THE LAND OF MOAB.**—In fixing the northern border of this land at the river Jabbok, we are influenced chiefly by the desire to avoid minute subdivisions in a cursory survey like that on which we are now engaged. In this we imitate the Scripture, which, when it speaks largely and generally, appears to give the same extent to the land of Moab. The fact is, that all this territory was once occupied by the Moabites; but the northern part—nearest the Jabbok—was taken from them by the Amorites, and erected into an independent kingdom. In the possession of this people the Israelites found it when they marched from the desert

<sup>a</sup> The above general account of Gilead has been drawn up from the various particulars dispersed in Lord Lindsay's large account (ii. 99, 101, 109, 120, 124-126, 142), with the help of ideas previously derived from Burckhardt, Buckingham, and Irby and Mangles.

towards the Jordan; and when it fell to them, by their victory over Sihon the Amoritish king, they bestowed it upon the tribes of Reuben and Gad. But the children of Lot always remembered that this land had been originally theirs; and in the time of Jephthah made a formal demand for its restitution, and a battle was the consequence of a refusal. It is, therefore, admissible to call the whole of the country, from the Jabbok southward to the borders of Edom, the land of Moab, when we require a larger and more comprehensive name than the minute subdivisions of political geography will, in this quarter, supply.

Notwithstanding that we have formerly fixed the southern limit at the Jabbok, we have, on more than one occasion,<sup>a</sup> expressed our willingness to include under that denomination the mountains which lie immediately to the south of that river. We have no difficulty in this; for, regarding Gilead as a loose general name for the more hilly part of the country beyond Jordan, and, as such, unrestricted by political divisions, there is no reason why the denomination should not be extended into the land of Moab.

The mountains south of the Jabbok have been already noticed in this work (p. xli.); and, in fact, the account there given of the country is a summary of all the information we possess, and shall be able to add but little to it in this place.

The views among the mountains on the south of the Zerka are, perhaps, less magnificent, but to the full as beautiful as in those to the north of that river. Lord Lindsay thinks he could distinguish three stages in these mountains,—the upper, chiefly productive of the prickly-oak and arbutus,—the central, of prickly-oak, arbutus, and fir,—while the lower slopes, particularly to the northward, are invested with the prickly-oak and the valonidis. This traveller draws a glowing picture of the beauty of the northward slopes. The descending paths wind through thickets of the most luxurious growth, and of every shade of verdure, frequently overshadowing the road, and diffusing a delicious coolness, though a delightful breeze, blowing freshly over the slopes, so allays the heat that it is never oppressive. In this most pleasant region the ear is also regaled with notes of happiness from the tenants of the thickets and the woods—"the cooing of the wood-pigeons, the calling of partridges—magnificent birds, as large as pheasants,—the incessant hum of insects, and hiss of grasshoppers, singing in the trees as happy as kings."

We will not allow ourselves to speak further of the mountains of this country. But of the plains and valleys, generally, it may be observed that the soil is exuberantly fertile, and, in the small portions which are cultivated, affords rich returns to the cultivator. It seems, in fact, that the wheat grown in this region, the size of the grains, and the number of grains in the ear, far exceed what is common. The country also abounds in rich pastures; which is true, indeed, of almost all the country east of the Jordan, whence it is now, in its desolate condition, much resorted to by the Bedouins with their flocks. And in the time of Moses it was so eminently "a land for cattle," that the tribes of Reuben and Gad, who "had much cattle," sought and obtained (with the addition of the half-tribe of Manasseh) to have it assigned to them expressly on that account.<sup>b</sup>

The population of the land of Moab, in particular, was fully equal to its fertility, as is evinced by the numerous sites of ancient towns which occur on every eminence or spot convenient for their construction. The valleys through which streams flow at any time of the year, are generally beautifully wooded. We have no room to describe particular valleys or plains. A few of the more elevated plains are very stony, many are covered with a fine grassy turf, and some are so thickly wooded as to take the character of forests. The appearances of spontaneous fertility considerably decline as we advance southward, and the scenery takes a less pleasing aspect. We pass tracts of chalky soil covered with flints. On the south-east the prolific mould gives place to a sort of clayey and stony soil; while the desert sands encroach on the south, and on the south-west the salt of Sodom intrudes, and covers the neighbouring tracts with unmitigated desolation.<sup>c</sup>

<sup>a</sup> 'Pictorial Bible,' note on Gen. xxxi. 25., and p. xli. of this work.

<sup>b</sup> Num. xxxii.

<sup>c</sup> More particular information concerning this country than we are able to give may be found in Burckhardt, Seetzen, Irby and Mangles, Buckingham ('Arab Tribes'), and Lord Lindsay.

We have now to turn our attention to the Haouran. The boundaries and mineralogical character of this district have been indicated in a preceding page (lxxxiii). This extensive plain has the countries of Bashan and Gilead on the west, and on the east the mountains and rocky tracts which form the boundary of the Great Syrian Desert. The northern part of it was probably included under the denomination of Bashan; and the whole may be concluded to have been at one time in the occupation of the tribe of Manasseh, if Gad had not also a share of it.

In its general character, the plain of Haouran resembles that of the Belka in the land of Moab, and of Esdraelon in Galilee, in having gentle undulations, the same level being nowhere of long continuation, although still not so much above or below each other as to destroy its general character, as an irregular undulating plain, the whole surface of which offers nothing that deserves to be called a hill.<sup>a</sup> The eminences that here and there break its continuity, are mostly small veins of rock projecting above the surface, and these appear to have been in all cases selected for the sites of towns, for the sake of securing a commanding position, a freer air, a dryer soil, and convenient access to the materials of building, which are, indeed, thus close at hand.

The soil is excellent for corn, whence the plain seems to have been in all ages regarded as the granary of Syria. It still supports that character; although now great part of it lies fallow for want of the cultivating hand, and teems only with wild flowers. "It must have been," as Robinson observes, "an agreeable and imposing prospect, indeed, to those who looked down upon its rich productions, at the time when the whole was brought under culture by the numerous and industrious Roman colonies that once inhabited these territories—its golden crops bending submissively under the breezes that crossed its surface, like the smooth undulations of the wide ocean, and, like it, having no other boundary than the horizon itself."

There are few springs in this district: but water is here indispensable to cultivation with the best possible soil; and hence the population of the Haouran owes its means of existence, and the success of its agriculture, to the numerous winter-torrents descending from the eastern mountains of Jebel Haouran, which traverse the plain. Few of these inundate the land; but the inhabitants make the best use of the water to irrigate the fields after the great rains have ceased. It is from these wadys that the numerous reservoirs are filled, which supply both men and cattle with water till the return of the rainy season. In all this plain, as in every other district, on both sides of the Jordan, where there are no springs, the cultivation follows the course of these winter-torrents, as in Egypt it follows the course of the Nile. The only, or by far the chief, evil to which the cultivator is here exposed, is a season of deficient rain; and, under severe drought, not only the harvests, but the rich pastures of the uncultivated parts, utterly dry up and wither. The whole of this country seems a desert in the maps; but it is, in fact, full of villages—more villages than there are people to occupy. These are ancient villages, apparently built when the country was rich and populous under the Romans,—not in ruins, but in a perfectly habitable condition, and to some extent inhabited. This is owing to the extraordinary durability of the buildings, which are entirely of stone—even to the doors<sup>b</sup> and door-posts, without the least portion of wood or other perishable material. This mode of construction, while it arose, in the first instance, from the want of wood—as there are no timber-trees, or hardly *any* trees in all the plain—has ensured, in a remarkable degree, the preservation of the houses in a condition of extraordinary freshness. The houses in these villages are free property to the inhabitants of the Haouran, who live in them rent-free, and when they are tired of one village remove to another as seems convenient to them. Those who first arrive appropriate the best houses, but they have no right in them,

<sup>a</sup> "The Haouran is an immense plain, very rich and fertile, sometimes slightly undulating, sometimes flat as a pancake,—with here and there low rounded hills, like dumplings, conspicuous from a great distance, and excellent landmarks."—Lord Lindsay, *ii.* 129.

<sup>b</sup> Few of the stone doors remain in use; but those which are still found entire, with the fragments of others, with the indications about the door-posts, render it manifest that most of the doors were anciently of stone.

nor desire to have any, longer than they continue to occupy them. There being more houses and villages than can be occupied, while no ties of property exist, removals are frequent, and scarcely a man can be found who is a native of the place in which he lives. Hence, also, some travellers find villages to be void of inhabitants which others had found to be inhabited, and the reverse.

The public buildings in the *towns* have suffered more, as might be expected, and are, for the most part, in fact, in ruins. They are all Roman; and, with the villages, satisfactorily evince how prosperous and populous this country<sup>a</sup> was under their rule: while the vast labour and expense which was bestowed by them on public works, destined to promote the comfort, and even the luxury of the inhabitants of the towns in their distant colonies, is evinced by the numerous remains of amphitheatres, paved roads, aqueducts, and reservoirs, which are still of vast service to the inhabitants. Works of this sort are, indeed, so numerous and important, in this and other districts east of the Jordan, that Mr. Buckingham could say, that "neither in the East nor West Indies, at the Cape of Good Hope, New South Wales, nor any other of the many colonial possessions of Great Britain, are there any works, even at their respective capitals (fortresses alone excepted) which can be compared for magnificence or utility with the numerous public works scattered over the region of Decapolis, and attached to the colonial towns of the Romans, of so little importance, even in their estimation, that not even their names have descended to us in the annals of their empire."

This same traveller was struck by the height of the stone door-ways, about seven feet, while in Palestine and other parts of Syria they are rather below than above the human stature, so that in most cases the passenger is obliged to stoop as he enters. But a good house includes a large room or stable for cattle; and it seems the doors are made so high to admit camels under shelter at night, and thus secure them from the incursions of the Bedouins. This flat country must always have been, as it is now, a camel country, and, from the indestructible nature of their materials, the rooms for their reception may have been of the highest antiquity.

"During our journey through the [western] hills," says Mr. Buckingham, "we had seen only horses, mules, and asses, used as beasts of burden; but since we have entered the plain of Haouran, we have met only camels, and these to the number of several hundreds in the course of one day. If this were really the land of Uz,<sup>b</sup> and the town [Gherbee] in which we now halted the place of Job's residence, as tradition maintains, there would be no portion of all Syria or Palestine that I have yet seen more suited to the production and maintenance of the 7000 sheep, 3000 camels, 500 yoke of oxen, and 500 she-asses, which are enumerated as forming the substance of 'the greatest of all the men of the East' (Job i. 3). At the present day there is no man, probably, with such herds and flocks for his portion; but these are still, as they were in the earliest times, the great wealth of the men of substance in the country: and it is as common now as it appears to have been when the history of Job was written, to describe a man of consideration in these plains by the number of his flocks and herds, rather than by any other less tangible indication of wealth."<sup>c</sup>

It is difficult to say what were the limits of the LAND OF THE AMMONITES. Indeed it is not easy to find room, adequate to their relative importance, for the several tribes or nations which the Scriptures place in the country east of the Jordan. There are, however, large tracts of country, south of the Haouran and east of Moab, which remain to be explored; and although travellers have *heard* that all this country is desert, we should not be surprised if it proves that those districts form as fine a country as the Haouran or the plains of Moab, with, perhaps, as ample indications of a formerly dense and active population. The term "desert" is very loosely applied; and travellers are too apt to conclude that all which they do not see is

<sup>a</sup> Called by them Auranitis; but, in the extent now viewed, the present Haouran seemed also to have included at least a considerable part of Iturea.

<sup>b</sup> At Gherbee, near the western borders of the plain towards Bashan, the tradition is, that Job was born and lived there, or in that quarter, and that there is the scene of his history as detailed in the sacred volume.

<sup>c</sup> Burckhardt, 51-121, 211-250; Buckingham, 167, 171, 180, 251, &c.; Robinson, ii. 137, 161, 168; Lindsay, ii. 129, 130.

not worth seeing. Within our own times, much of the country which we have now been describing was regarded as much a desert as that unexplored region which is now indicated as bearing that character. There was plenty of room for the Ammonites to spread in this direction, to the extent of that idea which the scriptural accounts seem to give of the relative importance of this branch of the family of Lot. Their territories may also well have reached beyond the Zerka into the southern parts of the Haouran—a name which described the country without any reference to its occupiers. There is a chain of hills commencing near the Zerka, at about the distance of forty miles east of the Jordan, by the name of Jebel el Zoble, and which is continued southward under different names, and at a diminishing distance from the Dead Sea. Extensive plains lie *between* these hills and the hill country of Moab; and beyond them, eastward, all *is said* to be desert. Now as it happens that the remains of a site which still bears the name of *Amman*, and which was doubtless originally that of *Rabbah*, the capital of the Ammonites, has been found upon the hills at the north-western border of this plain, it might be safe to give them as much of this plain itself as might not interfere with the claims of their brethren the Moabites, besides the very possible extension into the southern parts of the Haouran and into the “desert” beyond the eastern hills. Confining our attention to the known part which we have not yet described—which is the eastern and northern part of these enclosed plains—we may observe that even this has been little explored by travellers. Seetzen, Burckhardt, and Irby and Mangles, only traversed the south-western portion, belonging, as we suppose, to Moab; and the more easterly route of Buckingham, from Amman to Om el Russas, ran about twelve miles from the eastern hills; and he, therefore, with Mr. Robinson, who saw something also of this part, are the only travellers who supply any available information.

Proceeding from Amman southward, through the plain, we find everywhere a fertile soil capable of the highest cultivation, but entirely uncultivated. A broad Roman road extends completely through it, and far beyond it. The plain seems to have a slight ascent for sixteen miles, where the highest point is reached in an elevation which commands a view over a still more extensive plain than that which has been passed, lying on a somewhat lower level. “Throughout its whole extent were seen ruined towns in every direction, both before, behind, and on each side of us; generally seated on small eminences, all at a short distance from each other; and all as far as we had yet seen bearing evident marks of former opulence and consideration. There was not a tree in sight as far as the eye could reach; but my guide, who had been over every part of it, assured me that the whole plain was covered with the finest soil and capable of being the most productive corn land in the world. It is true that for a space of thirty miles there did not appear to me a single interruption of hill, rock, or wood, to impede immediate tillage; and it is certain that the great plain of Esdraelon, so justly celebrated for its extent and fertility, is inferior in both to this plain. Like Esdraelon, it appears also to have been once the seat of an active and numerous population; but on the former the monuments of the dead only remain, while here the habitations of the living are equally mingled with the tombs of the departed, both thickly strewn over every part of the soil from which they drew their sustenance.”

Om el Russas, the most southern point which has been reached in this direction, is about forty-two miles S.S.E. from Amman. After the first eighteen or twenty miles, the quality of the soil differs from having a larger proportion of clay, but it still continues fertile and highly cultivable. But after leaving a place called Om el Keseer, which is twenty-five miles from Amman, it appears to grow progressively inferior, though for the most part still capable of cultivation. The face of the country also becomes more unequal and the level descends; and before we reach our limit the ground becomes stony, chalky, and barren. The unexplored country southward is no doubt desert.

In short, this country, or series of plains, has a rich soil, but is without trees or shrubs. The ground is highly cultivable, but exhibits not the least trace of actual cultivation; and while numerous ruins indicate how rich and populous the country once was, it is now, more

than even the Haouran, without fixed inhabitants. The wandering tribes resort to it in the summer months, for the sake of the pasturage which it offers; but when they have left, the ashes and dung of their encampments are the only signs of human occupation which the country affords. "It is now one vast desert, which has long ceased to be occupied by man in a civilized state."<sup>a</sup> Thus truly has Ammon become "a desolation," as the prophets foretold.<sup>b</sup>

Although there are not, properly speaking, any deserts in Palestine itself, the deserts by which it is bounded on the east, and on the south, figure so largely in the history of the country, and exercised so manifest an influence on the condition and relations of its inhabitants, as well as on their ideas and sentiments, that it is quite necessary to bestow upon them a concluding portion of our attention.

The best and most satisfactory general description of these deserts is that which has been supplied by Volney;<sup>c</sup> and having tested this account by some information in our own possession, and by the statements of various travellers who have crossed the desert he describes, we have judged it best to adopt it as the basis of the following account.

To form an idea of these deserts, the reader must imagine a glowing and unclouded sky, over plains so vast that the view is lost in them; and entirely destitute of buildings, trees, rivulets, or hills. Often in these plains the eye meets nothing but an extensive and uniform horizon like the sea; while a few isolated palm-trees, here and there, complete the illusion by appearing in the distance like the masts of ships. In other parts the undulated surface suggests the idea of a stormy sea,<sup>d</sup> while in others it is roughened by rocks and stones. Almost always arid, the land offers only some wild plants, thinly scattered, and thickets, whose solitude is rarely disturbed but by gazelles, hyænas, hares, jerboas, and locusts. Such is the character of nearly the whole country, which extends 600 leagues in length and 300 in breadth, stretching from Aleppo to the Arabian Sea, and from Egypt to the Persian Gulf.

In such an extent of country there is, however, considerable variation of soil. Upon the frontiers of Syria, for example, which is that portion of this immense desert with which we have most concern, the soil is in general rich, cultivable, and fertile. It is of the same character on the banks of the Euphrates. But in the internal parts of the country, and towards the south, it becomes white and chalky, as in the parallel of Damascus, then stony as we advance into the deserts of El Tyh and of the Hedjaz, and ultimately pure sand, as to the east of Yemen. These variations produce corresponding differences in the condition of the inhabiting tribes. In the districts where the herbage is scarce or meagre, as in the Nedjed and in the interior of the great desert, the tribes are feeble and very distant. They become less rare and nearer to one another in those parts where the soil is less bare and the oases more frequent, as between Damascus and the Euphrates, and in the cultivable cantons of the Aleppo pashalic, in the Haouran; and in the country of Gaza the Arab camps are numerous and contiguous. In the first case, the Bedouins are a purely pastoral people, living on the produce of their flocks and on a few dates; in the second, they are demi-cultivators, and sow some land, which enables them to add to their fare a little rice and barley.

This invincible sterility of the desert, even where the soil is naturally fertile, or where not

<sup>a</sup> Buckingham's 'Arab Tribes,' 82-99; Robinson, ii. 171, 180.

<sup>b</sup> Dr. Keith, in his popular work on 'Evidence from Prophecy,' describes the Haouran as the land of the Ammonites. But it is not likely that they ever had more than perhaps a portion of the south of that vast plain. The district which we have now described would have answered his laudable purpose as well or better, and it may with far greater probability than the Haouran be assigned to the Ammonites. In Dr. Keith's remarkable book, the parts which refer to *towns* are by much the most valuable. When there is a determined site, such facts and observations as those which this author has collected apply with great force and effect; but in those portions which refer to the state of the "Lands" of certain ancient nations, there is, perhaps necessarily, much vague and uncertain matter, and the result is comparatively ineffective to the instructed reader.

<sup>c</sup> Baron Taylor bears witness to its value by copying it entire, with some slight alterations and additions, into his recent publication, "La Syrie."

<sup>d</sup> The comparisons, here employed, of the desert to the sea in various conditions, are so common that they have become trite. Yet, we can answer for it, they are the ever first and last impressions which strike a traveller, and are, therefore, natural and proper. The reader who would like to trace the varying characteristics of the desert between Syria and the Euphrates, cannot do better than consult the daily entries in Colonel Capper's 'Observations on the Passage to India, through Egypt and across the Great Desert' (1783).

absolutely sandy, is entirely owing to the absence of water; and this want of water is occasioned by the nature of the country, which being flat and destitute of mountains which might arrest the clouds, they glide over its heated surface during nine months of the twelve without affording a single drop of rain. Thus, during the day, the sky sparkles in brilliance, and is of the finest azure during the night. In winter only, when the cold of the atmosphere condenses the clouds, they soon resolve themselves in showers; but in the interior of the desert the water thus supplied is very quickly absorbed by the arid sands. Upon the borders only it affords an irrigation by which the natural fecundity of the soil is awakened. The summer comes; and all this water disappears without any durable result in springs or perennial brooks. Hence to avoid the inconvenience of wanting water the whole summer, it has been necessary to form, by manual labour, wells, cisterns, and reservoirs, in which to preserve a supply of rain-water for the year. Such works, though rude and inadequate, are expensive and laborious, and are therefore of rare occurrence, except in the more settled districts. Besides, war may destroy in one day the labour of many months and the resources of the year. A drought, which is but too common, may cause the failure of a crop, and reduce the inhabitants to a total want of water. It is true that, by digging, water may almost everywhere be found at from six to twenty feet deep, but this is generally brackish, and the supply is soon exhausted. Then thirst and famine supervene; and unless the government interferes, the villages are deserted. From this it results that the condition of agriculture is, in such border districts, most precarious,<sup>a</sup> and the establishments are constantly menaced with ruin; and when to this operation of natural causes, is added the weight with which the exactions of the government press upon the cultivator, it must often seem the better choice to lead a wandering life than to reside in a fixed habitation and rely on agriculture for subsistence.

In those districts where the soil is stony and sandy, as in the deserts between Palestine and Sinai, in which the hosts of Israel spent forty years, and in those of the Hedjaz and the Nedjed, these winter rains make the seeds of the wild plants shoot, and revive the thickets, the ranunculuses, the wormwood, the kali, and the numerous other plants and herbs with which the desert then abounds. They render the lower grounds marshy, which then produce reeds and grass, and the plain assumes a tolerable degree of verdure.

Major Skinner, who crossed at this season the desert between Damascus and Babylonia, describes it as having then nothing appalling but the name,—as being, in fact, a perfect garden, in which it is easy for the traveller to mark his progress by the plants he meets, as every day exhibits the predominance of some new race.

But all this glory of the desert, which supplies so many metaphors to the prophetic writers, is most transitory. On the return of the heats, everything is parched up, and the earth, converted into a gray and fine dust, presents nothing but dry stems, as hard as wood, on which no animals can feed.

Yet even the desert is not without such immunities and congenial charms, as endear it to its wild inhabitants, as much as the most fertile and pleasant country can be endeared to a civilized people. Its climate is more fixed and salubrious than that of the countries by which it is bordered. The plague is scarcely known; ophthalmia is very rare; and the small-pox may be described as the only endemic malady. The Arab tribes have, from remote times, divided these wide and arid sands among themselves. These territorial divisions are necessarily of very great extent, as it often happens that the desert in an extent of thirty miles offers only a few roods of land where the flocks can find even a dry and scanty herbage. Thus, in order to obtain nourishment for a few cattle, the Arabs are obliged to overrun vast tracts, and this has engaged them to the nomade life. But besides this physical reason, which explains and justifies the Bedouin condition of existence, there are others of a political sort which are not less operative. For if, in fact, their migratory habits only proceeded from the nakedness of their country, they could advance into the fertile districts along their frontiers, and form there nearly permanent encampments, as the Hebrew patriarchs did in Palestine,—

<sup>a</sup> Even the Haouran comes within this description. There are times when all the hopes of the year are destroyed by the failure or inadequacy of the winter rains. Such was the case at the time of Mr. Buckingham's visit to that quarter.



ending by founding villages, like the Turkmans and Koords. But they do not this. They choose rather to dwell in plains the most naked, in steppes the most inaccessible. And why? It is because that which the Arab values before all other things is his independence, his complete isolation from every form of superiority or patronage, whether mild or onerous, cruel or clement. That which the Bedouins most seek is to keep themselves from a position which might lead or compel them to bear arms for the pashas, and leave them at liberty to pursue what they consider their proper trade of rapine and theft. This is the great motive to them of preserving a mode of life which renders such continual and fatiguing removals necessary. But if they chance to light upon a place where they think they can enjoy security and freedom, joined to adequate resources, they remain there, and insensibly pass into the condition of settled cultivators. But if it happens, on the contrary, that the vexatious tyranny of a governor puts an end to the patience of an established village, it is no unusual thing for the inhabitants to flee in a body to the mountains, or into the plains, often changing their stations that they may not be surprised. Sometimes it happens that such people, after having become robbers from the necessities of their position, form new hordes and ultimately class themselves into tribes. But these new people, born in a cultivable country, almost never quit the frontiers, and never without great difficulty arrive at the determination to throw themselves into the heart of the desert. The desert is the exclusive domain of the Arab, who is born in it.

We have not been able to withhold these facts, as they appear to us to contribute much illustration to many circumstances which the sacred history records, and to the conditions and mutations of life which it exhibits. We thus see by what process the migratory inhabitants of the desert become like the Hebrews, a settled agricultural people; and again, how the people settled on the borders may melt away into the great Bedouin mass. The tendency of such people to remain as near as possible to their original seats would be a most interesting circumstance if it should authorise us to conclude, or even to conjecture, that the descendants of Lot and Esau may still be found among the Bedouins, who are now almost the sole inhabitants of the lands of Moab, Ammon, and Edom.

It may seem proper to follow this general statement by a somewhat more particular notice of the country between Palestine and Egypt, and between Palestine and Sinai, which forms the desert—or rather portion of the desert—best known to the Hebrews at all times, and unquestionably that in which their forty years of wandering were passed. Indeed, in memory of this, the whole still bears the name of El Tyh—the Wandering—which is also borne by the ridge of mountains that separate it on the south from the Upper Sinai: in Scripture different parts of it seem to be called by different names; but that which seems capable of the largest application to the whole is “the wilderness, or desert, of Paran.”

“The space comprised between the Delta, the extremity of the Red Sea, and the Mediterranean, contains in the north-west some cultivated lands, watered by the derivations of the Nile. The rest, absolutely arid, forms what are called the deserts of the isthmus of Suez; towards the south-east vast sandy plains extend along the Mediterranean to Syria and connect themselves with those which adjoin the Dead Sea and Palestine.”<sup>a</sup> Such is the information, good as far as it goes, which at the end of the last century was obtained by the French *savans*. Since then more detailed information has been supplied from various sources.

The reader is very apt to imagine that the whole is a dead and arid level. But this is by no means the case, the irregularity of the surface and diversity of appearance being considerable.

Only the maritime borders, on either hand, of that part of the peninsula of Sinai which lies north of the Tyh mountains have been described. For Mr. Arundale, who did traverse the interior, gives only a few slight hints, which just enable us to conclude that, as the connection might suggest, one general character belongs to all the desert which extends, from south to north, about 100 miles, from the ridge of El Tyh to the tract of high and barren mountains which occur about 75 miles to the south of Hebron; and from east to west, about 240 miles, being from the vicinity of Cairo to the Valley of Araba. This great tract of country, or rather

<sup>a</sup> Rozière, De la Constitution Physique de l'Égypte, 301, 302.

that principal portion of it which lies to the east of the isthmus of Suez, is the proper El Tyh desert.

This then may be described, after the information of Professor Robinson, as a vast unbounded plain, its surface not sandy, but, for the most part, of a hard gravel, often strewed with pebbles. Numerous wadys, or watercourses, intersect it; and in most of these are to be found some scattered tufts of herbs, or shrubs, on which the camels browse as they pass along, and which serve also as their pasturage when turned loose at night. Irregular ridges of limestone hills are seen in various directions. The mirage frequently occurs. Wells are found at considerable distances, and the water is in all of them drinkable, though none seem to be exempt from that mineral [sometimes sulphureous] taste so commonly found in the wells of the desert. This desert is, in fact, an elevated plateau, much above the level of the Red Sea, and as high or higher than the tops of the mountains by which we ascend to it, whether from the southern valleys of Sinai, or from its eastern or western shore, or from behind Akaba, or from the Wady el Araba.<sup>a</sup>

Advancing upon this plain from the south or the south-east, we have before us, as a landmark, a high conical mountain. It is in view at least three days before we come to it, and in the distance appears isolated. It bears the name of Jebel Araif-en-Nakah, and a lower ridge extends from it eastward. As we approach it, the country becomes undulating and uneven and the hills more frequent. The mountain itself forms the south-eastern corner or bulwark of a mountainous region which extends hence to the northward, and from it a ridge stretches east terminating in a bluff called Makrah, near the Araba and opposite Mount Hor. After passing this mountain the character of the desert is changed. On our right is now a mountainous district composed of irregular limestone ridges, running in various directions, and filling the whole country eastward quite to Wady Araba. The road passes along the western side of this mountainous district crossing many broad wadys, which flow down from it westward, with elevated ridges of table-land between them. Beyond the district thus described, the country opens into wide sandy plains, in which Dr. Robinson [who had already been in Egypt and Sinai] had his first experience of the simoom. This character of the desert is preserved till we reach Wady Ruheibah, which, being thus on the borders of the sandy desert, we have before agreed to consider as the southern frontier of Palestine.

Of the extraordinary visitations to which the deserts are subject, the hot wind, called by the Arabs the *simoom*, and by the Turks *samiel*, both of which words mean the *poison-wind*, seems the most remarkable and injurious. The accounts which are given by different persons vary so greatly, that it is difficult to deduce from them a connected statement of facts; and some writers have gone so far as to discredit the stronger effects which have been ascribed to this phenomenon. The fact seems to us to be, that, in this, as in a thousand other matters, people infer analogies between what they do see and what they do not see; and in this they may be, and often are, wrong, from not knowing, or not taking into account, the circumstances by which differences and modifications may be and are produced. Travellers, whose routes almost always lie along the borders of the great desert, and who never visit those vast interior solitudes of sand which only the natives dare to traverse, witness only these phenomena in the most mild and mitigated forms, and thoughtlessly infer that they must be equally mild in the very heart of the desert, although they know that the causes which produce them must there be operating with more intense effect. What we ourselves deduce from the balance of testimonies is, that these phenomena are exhibited with diminished force the greater our distance from the heart of the desert is increased; and that the travellers who describe those mitigated phenomena which alone they noticed in their border routes, have no right to deny the concurrent testimony of history and of the natives, which ascribe to them stronger developments and more ruinous effects in the interior of the desert.

The simoom blows generally from the direction of the nearest sandy deserts; in Syria from those of Arabia, and in Egypt from those of Africa. Dr. Russell informs us that "the true

<sup>a</sup> This appears from comparing the intimations of Burekhardt, Laborde, Robinson, and Arundale.

simoom" (by which expression he seems to have felt the necessity for such a distinction as we have now made) never reaches so far north as Aleppo, nor is common in the desert between that city and Basrah. He was, however, careful to collect the reports of the Arabs, which he thus states:—"They assert that its progression is in separate or distinct currents, so that the caravan, which in its march in the desert sometimes spreads to a great breadth, suffers only partially in certain places of the line, while the intermediate parts remain untouched. That sometimes those only who happen to be mounted on camels are affected, though more commonly such as are on foot; but that both never suffer alike. That lying flat on the ground till the blast passes over is the best method of avoiding the danger, but that the attack is sometimes so sudden as to leave no time for precaution. Its effects sometimes prove instantly fatal, the corpse being livid, or black, like that of a person blasted by lightning; at other times it produces putrid fevers, which prove mortal in a few hours; and that very few of those who have been struck recover." This is not all they tell. The attention of Thevenot was strongly drawn to the subject, and he made particular inquiries concerning it, at the towns on the borders of the desert, of different persons in different places. He says that they all agreed in their testimony, which is the same in substance as that which has just been adduced, with the additions,—which, we know, form part of the current account among the natives.—"No sooner does a man die by this wind than he becomes black as a coal, and if one take him by the leg, arm, or any other place, his flesh comes off from the bone, and is plucked off by the hand that would lift him up. They say that in this wind there are streaks of fire as small as a hair, which have been seen by some, and that those who breathe in those rays of fire die of them, the rest receiving no damage." We willingly confess that there are some points in these statements which savour of exaggeration; but we consider that, taking the whole of these reports at their lowest value, they evince at least that the simoom is sometimes productive of immediately fatal effects in the interior of the deserts. Most of the described phenomena suggest a highly electrical state of the atmosphere, and the symptoms of immediate putrefaction are such as occur in cases of death by lightning.

The *mitigated* effects of this wind, as experienced and reported by European travellers, may thus be described.

The Arabs, and others accustomed to the deserts, are aware of the signs which portend a coming simoom, and if they make the discovery before a day's journey is commenced, cannot be induced to depart from their station until it has overpast. Even the cattle are aware of the approaching evil, and manifest their uneasiness by plaintive cries, and other tokens of distress. All animated nature seems to take alarm, and to throw itself upon the defensive. The horizon gradually assumes a dull purplish or violet hue, while the sun becomes shorn of its beams, and looks red and heavy, as through a London fog. Then comes on the hot wind, laden with a subtile and burning dust, or rather fine sand, which penetrates to all things; the atmosphere becomes exceedingly hot, and the air, less even from its heat<sup>a</sup> than from its noxious qualities and the particles with which it is laden, is breathed with difficulty; and even under the shelter of a tent, and with every possible precaution and safeguard, the effect is most distressing. It tires, burns, dries up the lungs, the mouth is parched, the skin dry, and a feeling of universal debility prevails, while the pulse rises as in fever. Life seems attacked in its most delicate organs; and there is much reason to think that any prolonged subjection to even this greatly mitigated form of the evil would be attended with serious consequences; and still more if no measures of protection against it were sought. Mr. Madden, who was exposed to a somewhat slight simoom in the desert of Suez, and remained in his tent while it lasted (above seven hours) describes the sensation as inexpressibly distressing; but he does not think it was the degree of heat that occasioned it, for in Upper Egypt he had suffered an equally high temperature<sup>b</sup> without any such prostration of strength and spirits. But he believes the hot wind

<sup>a</sup> Fynes Moryson (not the Morison we have so often cited) compares the inspiring of this air to the hasty swallowing of too hot broth!—a homely but expressive comparison.

<sup>b</sup> "The thermometer at two o'clock rose to 110° in the shade; and on putting the bulb in the sand, outside the tent, in a few minutes the mercury was at 130°."

of the desert to be connected with an electrical state of the atmosphere, which has a depressing influence on the nervous system. And this, it will be remembered, is the opinion of a medical man.

In Egypt, where, as in Palestine, this wind is much less alarming than even in the border deserts, it exchanges its name of *simoom* for that of *kamseen* (fifty), because it is felt the most frequently during fifty days about the vernal equinox.



[Sand-Storm.]

It is not so much alleged, generally, that the naked operation of the *simoom* is so destructive, even in the interior of the great deserts, as the immense drifts and whirlwinds of sand which it raises. We have seen that there are some indications of this,—that it fills the air with fine sand, even in the border deserts; and how much more, then, in those vast interior expanses, where, even in a state of rest, the immense hills<sup>a</sup> of sand thrown up by the winds, and left to be swept away and removed by some future storms, bear evidence to the operations of the wind upon these sandy surfaces. Immense clouds of sand are, under the operation of the wind, raised high in air, and in their ultimate fall overwhelm whatever lies below. Often the whirling eddies of the wind condense the drifting sands into more compact masses, causing them to spindle up into tall and rounded columns, which, still acted upon by the power which reared and sustains them, keep moving over the plain till they fall in a hill or wide-spread sheet of sand. Thus the surface of the desert is, to a considerable depth, in frequent motion; and thus, we are told, caravans and entire armies have been slain and buried by the concurrent effects of the hot wind, and of the immense masses of sand which it drifts so furiously along. To such a cause history attributes the loss of the army which the mad Persian conqueror, Cambyses, sent across the desert against the inhabitants of the oasis of Ammon. Happily these sand-storms, in their more terrible forms, are far from common; else no one could adventure to pass the desert. They are also less frequent, and less formidable in the deserts of south-western Asia than in those of Africa, westward from Egypt, where the tracts of sand are more extensive, and seem to be more easily set in motion.

As the *simoom* usually moves at a certain height in the atmosphere, the common resource against its effects is, as already intimated, to lie flat on the ground till they pass over. Man

<sup>a</sup> In the Caspian steppes (of pure sand) we have seen such hills at least thirty feet high, by about the same diameter.

was probably taught this resource by observing that, at such times, camels and other animals bend their heads to the ground and bury their nostrils in the sand. Shelter from the sand-storm is sought in nearly the same manner. The traveller generally lies down on the lee side of his camel; but, as the sands are soon drifted around him to the level of his body, both the beast and its owner are obliged frequently to rise and change their position, to avoid being entirely covered. If the storm is of long duration, as it often is, this constant exertion, with the effects of the hot wind, and the dread and danger of the sandy inundation, produces such weariness, sleepiness, or despair, that both men and animals remain on the ground, and a very short time suffices to bury them under the sands. It is thus chiefly that the simoom becomes extremely destructive to the life of man and beast. It is easy, in our own cool and quiet country, to sit down and doubt about these things; but the whitened bones which strew the desert bear witness to their truth. And any one who, at even a safe season of the year, has passed over such wastes, and during the halt of his caravan has lain down for rest upon the sand, wrapped up in his cloak, must, like the writer of this, have felt a very serious conviction of the probability of such events. The only marked objects in the sandy desolation are the huge hillocks of drifted sand; and he knows, that such winds as formed them will disperse them all abroad over the face of the land; and he knows not but that, after the next storm, a mound of sand may cover the place whereon he lies.

These showers and whirlwinds of sand, or of sand and dust, or of dust only, according to the nature of the country, were certainly known to the Hebrews. Their then recent experience in the desert, taught them to know the full intensity of those visitations with which Moses denounced that God would scourge their disobedience:—"Thy heaven that is over thy head shall be brass; and the earth which is under thee shall be iron. Jehovah will give instead of rain to thy land dust; and *from the heavens shall dust descend upon thee until thou be destroyed.*"<sup>a</sup>

The threat of dust to the land instead of rain, brings to mind the tendency of the drifted sands to encroach upon the cultivable lands of the borders. The tendency of actual cultivation is to repel such encroachments; but, where cultivation is discontinued, a very serious loss of cultivable soil is in the course of time incurred. Ample proof of this may be seen on the south and the south-east borders of the Holy Land, showing the actual fulfilment of the denunciation we have adduced. Here again the desert is comparable to the sea; for, as the sea encroaches on the land, so do the sands encroach upon the cultivable soil.<sup>b</sup>

This text might also be adduced in support of the statement that ascribes largely destructive powers to these visitations. They have not been unknown even in the northernmost parts of Syria. Witness William of Tyre's account of the whirlwind of sand to which he ascribes the victory of the Moslems over the prince of Antioch, in the territory of that name.<sup>c</sup> And we might, therefore, expect them to be still more common in Palestine, as they are in Egypt and in other countries bordering on extensive plains. Moses describes the desert in which the Israelites wandered for forty years as "a desert land, the waste howling wilderness;"<sup>d</sup> and as "that great and terrible wilderness, where were fiery serpents, and scorpions, and drought, where there was no water;"<sup>e</sup> and of which Jeremiah<sup>f</sup> more amply speaks as of "a land of deserts and of pits, a land of drought and of the shadow of death, a land that no man passed through, and where no man dwelt." And that among the characteristics indicated in these terms, those which we have described may, to some extent, be comprehended is shown by the account which William of Tyre gives of the march of Syracon, general of the army of Nouredin Emir of Damascus, and uncle of the famous Saladin, into this very desert, between Syria and Egypt, in which the Israelites wandered so long. During the march the

<sup>a</sup> Deut. xxviii. 23, 24.

<sup>b</sup> This is, perhaps, more strongly manifested in Egypt. Denon says,—“When this destructive scourge sets in from the desert, the inundation of sand often overwhelms the country, changes its fertility to barrenness, drives the labourer from his house, whose walls it covers up, and leaves no other mark of vegetable life than the tops of a few palm-trees, which adds still more to the dreary aspect of desolation. Thus the desert is continually encroaching on the fertile land; and, were the waters of the Nile to discontinue their inundations, the whole vale of Egypt would eventually become a desert, or a vale of sand.”

<sup>c</sup> 'Hist. Belli Sacri.' xii. 9.

<sup>d</sup> Deut. xxxii. 10.

<sup>e</sup> Deut. viii. 15.

<sup>f</sup> Jer. ii. 6.

troops were encountered by a whirlwind of such force, that it raised into the air vast clouds of sand, which obscured the sun and occasioned a thick darkness. So densely filled was the air by the sandy particles, that no one dared to open his mouth or eyes, to speak to another or to look around him. The horsemen deemed it prudent to dismount; and many prostrated themselves and dived their hands deep into the sand, to obtain such fast hold as might prevent the wind from whirling them up, and breaking their necks or legs in casting them again to the ground. Some of the men did lose their lives; many camels also were lost, and most of the provisions; and the army was, for the time, quite dispersed by the storm. "For in this desert," says the historian, using the standard comparison, "waves of sand are raised and tossed about, like the waves of the sea when troubled by tempestuous winds; so that to navigate a stormy sea is, at times, not more dangerous than to pass such deserts."<sup>a</sup>

Another phenomenon of the desert is the *mirage*. This is an illusion, producing the most cruel disappointment to those who traverse the dry and sandy plains, as it assumes precisely the appearances most calculated to delight the traveller and to seduce him from his way. Sometimes he sees before him a fine lake; but if, in the eagerness of thirst and heat, he hastens towards it, the margin seems to retire, so that the surface of water as he advances becomes narrower, and at last disappears altogether; but the whole appearance may be again exhibited before him at the same distance as that at which it was first observed. All this time the impatient traveller will seem, to those who have remained behind, to have reached the margin, to have entered the lake, and to have forded it to the other side. Or again, there may seem to be the fair similitude of a green oasis, with its tufted palms, traversed by a broad river. In such cases the illusion of water is complete: for not only are the bushes or other objects which may be on the margin reflected in it, but it has something like the ripple of water; and in such instances as the first is streaked by those numerous shining patches observable on the surface of lakes when viewed from a distance. The best prepared travellers are unable to resist the force of this illusion, or to believe that which they see to be unreal. The cruel mockery of such an appearance, in the midst of these arid steppes, may in some degree be conceived, but not properly appreciated without actual experience.

This phenomenon is very common even on the skirts of the desert, and must have been tolerably well known to the Hebrews. They called it by the name שֶׁרָב *serab*,<sup>b</sup> which it still bears among the Arabs, who, as well as the Persians, often use it, by a fine metaphor, to express disappointed hope. To this one prophet seems to allude when he asks, "Wilt thou be altogether unto me as unreal waters?"<sup>c</sup> And there is every reason to conclude that Isaiah draws his beautiful metaphors from the apparent effects thus exhibited in the desert, when he foretells the glories of the Messiah's reign<sup>d</sup> in glowing language which a poet of our own has not unworthily imitated:—

" The swain, in barren deserts, with surprise  
Sees lilies spring, and sudden verdure rise;  
And starts amidst the thirsty wilds to hear  
New falls of water murmuring in his ear.  
On rifted rocks, the dragons' late abodes,  
The green reed trembles, and the bulrush nods;  
Wide sandy valleys, late perplex'd with thorns,  
The spiry fir, and shapely box adorn;  
To leafless shrubs the flowery palms succeed,  
And odorous myrtle to the noisome weed."<sup>e</sup>

<sup>a</sup> • Hist. Belli Sacri.' xix. 15.

<sup>b</sup> The desert water.

<sup>c</sup> Jer. xv. 18.

<sup>d</sup> Isa. xxxv. In verse 7 the word rendered " parched ground " in our public version is actually this word, *serab*, by which the Arabs describe the mirage.

<sup>e</sup> Besides the authorities cited in the course of the preceding account of deserts and their phenomena, being William of Tyre, Volney, Taylor, Thevenot, Russell, Capper, Rozière, Denon, Skinner, Mr. Robinson, Madden, Dr. Robinson, Arundale, &c., the following have been consulted:—Pietro della Valle, ' Viaggi in Turchia,' &c., l. xix. Rauwolff, ii. 5; Du Bois-Aymé, ' Mémoire sur les Tribes Arabes; ' Burekhardt, ' Syria ' and ' Notes on the Bedouins; ' Belzoni, ' Narrative of Operations,' 341-343; Wellsted, ' Travels in Arabia,' ii. 31; Stephens, i. 236-238; Coutelle, ' Observations sur la Topographie de la Presqu'île de Sinai.'

## SUPPLEMENTARY NOTES.

(<sup>1</sup>) VALLEY OF JEHOSEPHAT, p. cxxi.—When different names are applied to the different parts of this valley it is usually thus:—The valley is divided into three parts, of which the northern is called the VALLEY OF KEDRON; the middle, the VALLEY OF JEHOSEPHAT; and the southern, the VALLEY OF SILOAM—from the fountain of that name on the one side, and the village on the other. These three names are also applied, respectively, to the whole extent of the valley; but that of the Valley of Siloam less frequently than the other two,—being only, that we recollect, so applied by Josephus. But it is more common to distinguish the Valley of Siloam, and apply one of the other denominations to all the rest. The other Scriptural names which have been generally thought to apply to this valley are the following:—

THE VALLEY OF SHAVEH, where Melchisedeck met Abraham when he returned from the slaughter of the kings. Gen. xiv. 17. This seems a very uncertain conclusion.

THE KING'S DALE, which, from the text just cited, was doubtless the same as the Valley of Shaveh, whether the same as the Valley of Jehoshaphat or not. In this King's Dale Absalom erected his monumental pillar. 2 Sam. xviii. 18. This name is equivalent to that of the *Royal Valley*, which it is supposed to have taken from the gardens and pleasure-houses which the kings reigning in Jerusalem had there.

THE VALLEY OF VISION is the name figuratively given to it by the prophet Isaiah (xxi. 2). But in the figurative allusions to this valley, Jerusalem itself is often intended.

The name *Jehoshaphat* means *the Judgment of Jehovah*. Joel is the only prophet who uses the name *Valley of Jehoshaphat*, and there is an evident play upon the name and its meaning in what he further says, thus,—“Come up to the Valley of Jehoshaphat [*i. e.* of God's *Judgment*] for there will I *judge* all the heathen round about. . . . Multitudes, multitudes in the *Valley of Judgment*.” (Joel, iii. 12, 14.) This last name is rendered *Valley of Decision* in our public version; and this is the passage on which is founded not only the current name which the valley bears, but the popular notion as to its being the scene of the final judgment. If these names—even that of Jehoshaphat—apply to *any* natural valley, it is by no means clear that they apply to the valley to which this note relates. We have, therefore, called it the Valley

of Jehoshaphat, merely because it is the name by which, during a long series of ages, it has the most generally been described.

These are not the only names which have been given to the valley, but all which have been given on such authority as requires our notice.

(<sup>2</sup>) THE CICER FIELD, p. cxxiii.—It seems that this legend is told with considerable variations. One account, nearly as prevalent as the other, relates the story of Christ himself, and is thus reported by Rauwolf:—

“Before you is a large valley, which, although it be rocky, yet is fruitful both of corn and wine. In it, towards the right hand, near the road, is an acre called the Cicer-Field, which had its name, as I was informed, from the following transaction. It is said that when Christ went by at a certain time, and saw a man that was a sowing cicers, he did speak to him kindly, and asked him what he was a sowing there? The man answered scornfully, and said, ‘He sowed small stones.’ ‘Then let it be,’ said our Lord, ‘that thou reap the same seed thou sowest.’ So, they say, that at harvest he found, instead of the cicer-pease, nothing but small pebbles, in shape and colour and bigness like unto them exactly. Now, whether there be anything of truth in it or no I cannot affirm; but this I must say, that there are to this day such stones found in this field. For as we went by some of us went into it, and did gather a great many of them that were in bigness, shape, and colour so like unto these cicers (by the Arabians called *ommos*, and in Latin *cicer arietinum*) that we could hardly distinguish them from natural ones.”

The stock of these pebbles seems to be exhausted; and with them the legend appears to have fallen into disuse, as the attention of travellers is not now directed by their guides to this spot.

(<sup>3</sup>) JACOB'S BRIDGE, p. cxxxiii.—This bridge takes its name (*Jissr Yakoub*) from a tradition that it marks the spot where the patriarch Jacob crossed the Jordan on his return from Padan-Aram. But it is also sometimes called *Jissr Beni Yakoub*, the Bridge of Jacob's Sons, which may suggest that the name is rather derivable from an Arab tribe so called. It is about two miles below the Lake Houle. The river here flows through a narrow bed, and in a rapid stream; and here, to very remote times, has been the high road from all parts of Pales-

tine to Damascus. The bridge is a very solid fabric, well built, with a high curve to the middle, like all Syrian bridges. It is composed of three arches in the style of these constructions. Near this bridge, on the east, is a khan much frequented by travellers, in the middle of which are ruins of an ancient square building, constructed with basalt, and having columns at its four angles. This is explained by the fact that the khan is built upon the remains of a fortress erected by the Crusaders to command the passage of the Jordan. Its foundation is attributed to Baldwin IV., king of Jerusalem; and William of Tyre states that it was erected in six months. The possession of so important a post was hotly disputed by the Moslems, and, after several unsuccessful attempts, Saladin carried it by assault, and caused it to be destroyed. The khan is the common rendezvous of the caravans to and from Damascus and Acre. A guard of a few soldiers is always maintained here by the government, chiefly for the purpose of collecting the *ghaffer*, or tax paid by all Christians who cross the bridge. This tax is ordinarily about ninepence a-head; but the pilgrims who pass at Easter, on their way to Jerusalem, are required to pay not less than seven shillings—at least it was formerly; but, we believe, the distinctive tax on Christians has been abolished by the Egyptian government, and that, instead of it, a general tax on laden beasts has been substituted. The Rev. R. S. Hardy only notices that—"A tax of three piastres is imposed upon every laden camel, two upon every mule, and one upon every ass. The tax was last year (1832) farmed for 20,000 piastres."\*

(4) THE SIMOOM, p. cxliv.—Lucan had most correct information. His account of the deserts of Lybia, and of the sand-storm which the Roman soldiers, led by Cato, encountered in their march through them, remarkably agrees with, and illustrates, the particulars we have stated. We cannot refrain from adducing a few passages:—

"No leafy shades the naked deserts know,  
No silver streams through flowery meadows flow;  
But horrors there and various deaths abound,  
And serpents guard th' inhospitable ground.

No harvest there the scatter'd grain repays,  
But withering dies, and, ere it shoots, decays;  
There never loves to spring the mantling vine,  
Nor wanton ringlets round her elm to twine.  
The thirsty dust prevents the swelling fruit,  
Drinks up the generous juice, and kills the root;  
Through secret veins no tempering moistures pass,  
To bind with viscous force the mouldering mass;  
But genial Jove, averse, disdains to smile,  
Forgets, and curses the neglected soil.

\* 'Notes of the Holy Land,' 1834. For the other particulars see Burckhardt, Taylor, Skinner, &c.

Thence lazy Nature droops her idle head,  
As every vegetable sense were dead;  
Thence the wide, dreary plains one visage wear,  
Alike in summer, winter, spring appear,  
Nor feel the turn of the revolving year.  
Their herbage here (for some ev'n here is found)  
The Nasamonian hiuds collect around.

Here all at large, where nought restrains his force,  
Impetuous Auster<sup>a</sup> runs his rapid course;  
Nor mountains here, nor steadfast rocks resist,  
But free he sweeps along the spacious list.  
No stable groves of ancient oaks arise,  
To tire his rage, and catch him as he flies;  
But wide around the naked plains appear,  
Here fierce he drives, unbounded, through the air,  
Roars, and exerts his dreadful empire here.  
The whirling dust, like waves in eddies wrought,  
Rising aloft, to the mid heaven is caught;  
There hangs, a sullen cloud, nor falls again,  
Nor breaks, like gentle vapours, into rain.

Thus wide o'er Lybia raged the stormy south,  
Thus every way assail'd the Latian youth.  
Each several method for defence they try,  
Now wrap their garments tight, now close they lie;  
Now sinking to the earth, with weight they press,  
Now clasp it to them with a strong embrace;  
Scarce in that posture safe, the driving blast  
Bears hard, and almost drives them off at last.  
Meantime a sandy flood comes rolling on,  
And swelling heaps the prostrate legions down.  
New to the sudden danger, and dismay'd,  
The frighted soldier hasty calls for aid,  
Heaves at the hill, and struggling rears his head.  
Soon shoots the growing pile, and, rear'd on high,  
Lifts up its lofty summit to the sky:  
High sandy walls, like forts, their passage stay,  
And rising mountains intercept their way:  
The certain bounds which should their journey guide,  
The moving earth and dusty deluge hide:  
So landmarks sink beneath the flowing tide,  
As through mid seas, uncertainly they move,  
Led only by Jove's sacred lights above." Rowx.

Denon writes much about the simoom; and from him we are tempted to cite the following passage, relating to the march of a party of Egyptian Mamelukes, who took the pass from the Kittah by the way of Redisi:—

"This pass is never frequented by the merchants, and was fatal to the Mamelukes, who, by taking this road, lost their horses, together with a part of their camels, a considerable number of their attendants, and twenty-six women out of twenty-eight. Their march was traced by their disasters, and by what they left behind them,—tents, arms, clothing, the carcasses of horses starved to death, camels which were no longer able to support their burdens, attendants, and their women, whom they abandoned to their fate. I figured to myself the sufferings of a poor wretch, panting with fatigue, and expiring with thirst, his tongue parched, and breathing with difficulty the hot air by which he is consumed. He hopes that a few minutes' repose will enable him to recover his strength: he stops, and sees his companions pass by, calling on them in vain for help. The misery to which each one is a prey has banished

<sup>a</sup> The south wind.



every compassionate feeling: they proceed on their way without casting a look on him, and follow in silence the footsteps of those who precede them. They are no longer in his view,—they are fled,—and his benumbed limbs, already overpowered by their painful existence, refuse their office, and cannot be stimulated to action either by danger or by terror. The caravan has passed: it appears to him like an undulating line in the wide expanse, and, becoming at length a mere point, disappears altogether, like the last glimmer of an expiring taper. He casts around him his wild and frantic looks, but can see nothing: he turns them towards himself, then closes his eyes to shun the aspect of the terrible vacuity by which he is surrounded. He hears nothing but his own sighs, and fate hovers over him to cut the thread of his existence. Alone, and without a companion to do him the last offices, he is about to expire without one single ray of hope to administer comfort to his departing soul,—and his corpse, consumed by the parched and burning soil, soon becomes a bleached skeleton, which will serve as a guide to the uncertain steps of the traveller who shall dare to brave the fate that has befallen him.”

(\*) THE MIRAGE, p. cxlvii.—All the phenomena of the mirage, which are in considerable variety, are usually regarded as examples of unusual refraction. “As a general definition, we may say the mirage is an optical illusion caused by the refraction of light through contiguous masses of air of different density, such refraction not unfrequently producing the same effect as direct reflection.”\* This difference of density may be caused either by moisture or by heat. Among mountains and near bodies of actual water it is often seen, and is then caused by moisture; and in the dry sandy deserts by heat. In the former case it is most usually seen by night or in the morning, and in the latter during the heat of the day. As the desert mirage is that which engages our attention, we may observe, with more particular reference to it, that the case is there one of diminished density in the lower stratum of the atmosphere, caused by the increase of heat, communicated by the rays of the sun to the sand, with which this stratum is in immediate contact.

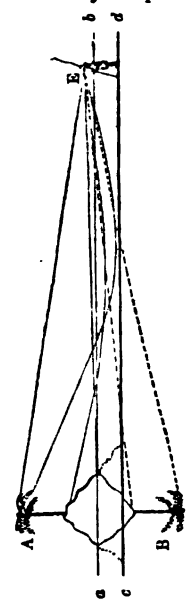
The following passage, for which we are indebted to the ‘Penny Cyclopædia,’ shows the application to most of the phenomena of the mirage:—

“All these phenomena, and their various modifications, depend on the different density of the lower strata of the air, and, as this difference of density may be occasioned both by

heat and moisture, and as heat may be reverberated from the mountain’s side, as well as from the horizontal surface of the plains, from the sea as from the land; and further, as contiguous columns of air, as well as horizontal strata, may be of different densities, it is easy to conceive why the mirage may be seen in very different situations, as also why it presents such varied appearances. It will also be evident that any cause which re-establishes the equilibrium of density in the different portions of the air must cause the illusions of the mirage to vanish.

“Supposing the nature of refraction to be understood, the explanation of the way in which difference of density in different strata of the air occasions the mirage becomes very simple.

Let A represent an object on a hill; *a b c d* a stratum of air heated by the reverberation from the soil beneath, so as to have a less density than that of the air above. Now, if an observer’s eye be at E, he will see the object by direct vision in its proper place, and also a reversed image of the same just below it at B, because the rays, coming from it obliquely towards the ground, are refracted from their direct course on entering the less dense inferior stratum of air, and, taking at first a direction inclining to the horizontal, are afterwards bent up so as to meet the eye of the observer at E, who thus sees the indirect image in the direction B, or exactly as it would appear if reflected; and moreover, as the rays from that part of the heavens which form the background to the object are refracted in the same manner, the sky is reversed as well as the object, and presents the appearance of a sheet of water.



“If the lower stratum of air be denser than the strata above, and the object be seen by direct vision through the denser stratum, then the curve or trajectory, instead of being convex towards the earth, will be concave, and the reversed image will be seen as if suspended in the air above.”

How the appearance of water may be produced; how actual objects may exhibit a reversed image in this apparent water; and how distant objects may be elevated and brought near by such refraction, is thus capable of most satisfactory explanation. But there still ap-

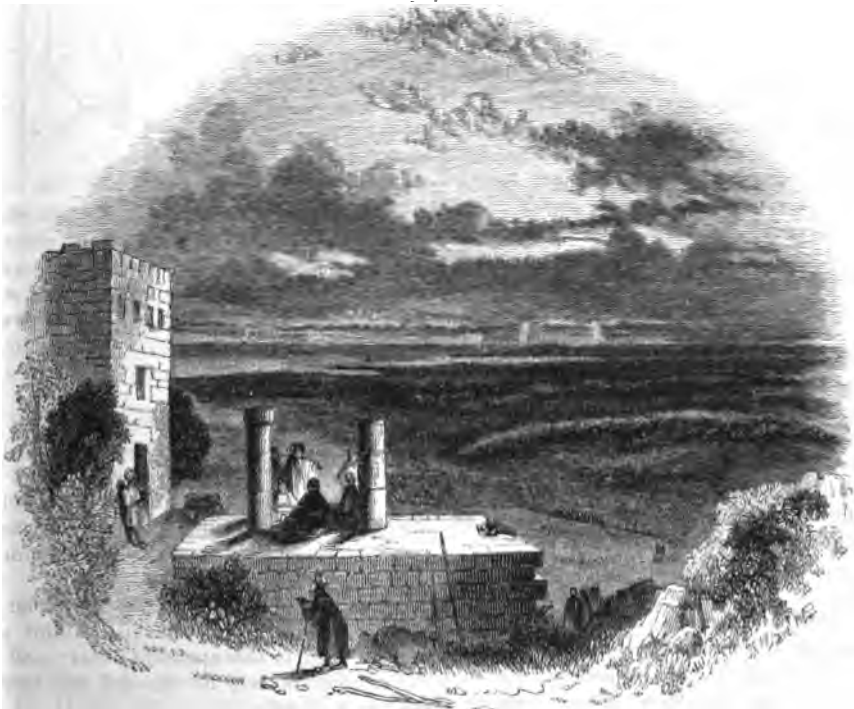
\* ‘Penny Cyclopædia,’ art. ‘Mirage.’

pear to be some points which, in all the accounts we have ever met with, we have never found explained to our full satisfaction. For example, an apparent lake, *surrounded by all the objects which a lake in such a climate might be expected to exhibit*, may be seen in situations known to be at least 200 miles distant from any place where a real lake can be found.<sup>a</sup> Is this the image of a real lake, brought near by refraction? Or is it purely an optical fantasy, produced in the manner which has been described? Considering that the point of view is low, and that the lake, if it exists, must be positively and comparatively lower, and taking into account the curvature of the earth in a distance of 200 miles, the first supposition gives a refractive power to the atmosphere infinitely greater than any accredited examples of apparent approximation, by even "unusual refraction," would require us to believe. The extent of the required power may be estimated by the fact that the curvature of the earth would alone exclude from view, at the distance of 200 miles, a mountain more than 20,000 feet high. Then as to the other alternative, although the appearance of water may be produced by optical illusion, whence come the trees and verdure by which the lake often seems to be surrounded

<sup>a</sup> Wellsted's 'Travels in Arabia,' ii. 31.

in deserts absolutely destitute of all vegetation? The appearance of a body of water, and of water only, being produced in the manner described,—is it not possible that, in a region where water is always known to give birth to vegetation, the imagination supplies in these cases the customary association? Or, in other words, that the appearance of water is a *physical*, and that of trees and verdure a *mental* illusion. That all the members of a caravan see it does not render this unlikely;—they all see the *physical* illusion of water, but we have no evidence that they all think they see surrounding trees and other objects, and still less that they see the *same* objects in the *same* spots with their companions. But great *similarity* of excitement among many men would be not only accountable but natural; for a greater marvel than the mirage itself is offered in the psychological phenomenon of the similar influence upon many minds of a continued subjection to the same atmospherical modifications, the same scenery, the same diet and manner of life, and, above all, the same privations and desires.

We are content to state this as an alternative to those whom the other explanations leave unsatisfied. The corroboratory considerations, for which we cannot afford room, will probably occur to the minds of most of our readers.



[Plain of Acre.—See p. cxxiii.]

## CHAPTER VI.

### LAKES AND RIVERS.



[The River Jordan.]

If we sail along the coast of Syria and Palestine, we cannot fail to notice the mountain ranges which extend through the entire length of the land. We shall observe that they run parallel to the shore at various distances, but nowhere at any considerable distance from it. We shall then consider, that the streams which water the country before us, arise from springs in those mountains; and, seeing that the course that they have to run must needs be short, and consequently that no time is afforded them to collect such tribute in their way as might give them importance, we shall infer that no stream deserving to be called a river can reach the sea. And when we further take into account the warmth of the low-lying country, and the want of rains in summer, we shall consider it very likely that there are few if any streams which continue to flow all the year, or which, in fact, are other than winter torrents. As the other, or inland, side of the water-shed which these mountains form is unknown to us, and as it is reasonable to suppose that all its waters are thrown in an *opposite* direction—that is inland, or eastward—we shall not calculate on any accidents which may bring round to the western coast, through openings in the mountains, any of the perhaps more considerable streams which have their rise in the farther side of the water-shed. All these conclusions from the natural organization of the country, as viewed from the coast, would prove to be correct. Nearly all the streams which flow from the western water-slope are mere torrents, rendered important during winter and spring by the rains and melted snows, but the course of which can only be discovered during the remainder of the year by the rounded stones and fragments of rock with which their beds are filled.

In all Palestine Proper not a single stream from a perennial source reaches the coast. It is only in the plains under the Lebanon mountains that such streams occur; and even there, such as maintain their existence throughout the year shrink to mere brooks during summer. Two of the only three streams in Syria that can strictly claim the name of rivers do find their way to the western shore, although they rise on the eastern slopes: the third—the one that does not this—is the JORDAN.

The particular information, as to the geographical construction of the country, which we have already given, in the chapter on mountains, will enable the reader to understand that, when the summit is attained of the frontier range of which we have been speaking, it is found that the waters of the eastern slope have a still shorter run than those of the western. Instead of stretching off afar into the eastern plains, the waters of this slope fall short into hollow basins—plains or valleys—which slope northward and southward, and collect and carry off the streams in channels running *parallel* to the mountains, in the form of the three most considerable rivers which the country offers. The channels of these three rivers traverse the entire length of Syria. The course of two of them—the Leontes and the Jordan—is to the south, and that of the Orontes is to the north. The opposite courses of the Orontes and Leontes demonstrate that the highest level in all Syria is at that part of the Lebanon chain, which to this day bears the distinctive name of *Jebel Libnan*: for in the valley of Baalbec, or on the lower slopes of these mountains, are the springs in which those rivers rise;<sup>a</sup> and although the sources are not ten miles apart, they take opposite courses—the one to the north and the other to the south. The Orontes, impelled northward by the slope of the land in that direction, proceeds through the plains and valleys which are overlooked by the eastern slopes of the northern mountains, and owes all its relative importance to the fact that it has to traverse 150 miles before it can find an outlet to the Mediterranean. At last the chain of mountains terminates in Mount Casius, and then the river turns and hastens to the Mediterranean through the plain of Antioch. On the other hand, the Leontes, rising in the neighbourhood of Baalbec, hastens southward, and finds a much speedier access to the sea. It follows the course of the great Lebanon valley, keeping nearly in its centre, and passes through its opening termination towards the sea, which it reaches in the neighbourhood of Tyre, eighty-five miles from its source.

The river Jordan rises nearly in the latitude in which the Leontes terminates. But this river never reaches any maritime shore;—after traversing two lakes, its course is cut short, and its waters lost in a third—the Dead Sea. Its basin drains the eastern water-slopes of Palestine Proper; but it drains them only of winter torrents, for all the country does not contribute one perennial stream to the Jordan. But it receives also the waters from the high eastern plains, and among these are the Jarmuch, the Jabbok, and the Arnon,—all of which, though their waters get very low, and almost extinct, towards the end of summer, are perennial streams.

Of these three rivers the Leontes is the least important; and although in length of course the Orontes much exceeds the Jordan, its volume of water is so inconsiderable, that, were it not impeded by successive obstructions, it would be quite dry during the summer.<sup>b</sup> The Jordan is, therefore, entitled to take its place as the chief of Syrian rivers; and perhaps this is distinction enough for it: but besides this, it may be said that for a line of nearly 3000 miles along the coast of Africa and of Syria, no one stream, except the Nile, contributes as large a volume of water to the Mediterranean as the Jordan contributes to the Dead Sea, and that all Arabia has not one river comparable to it. Such comparisons as this, among similar things, are more just to the Jordan than those which it was some years ago fashionable to make, to its disparagement, as compared with the great rivers of Europe. Yet there are

<sup>a</sup> It is true that both rivers originate in springs which rise both from Lebanon and Anti-Lebanon, and which unite in the plain. Any of these may be considered the source; and, in fact, the spring which is considered the source of the Orontes is on the Lebanon side, and that which is regarded as the source of the Leontes is on the Anti-Lebanon side near Baalbec. But the question of the highest water-level is not affected by the determination as to the particular springs which are to be regarded as the sources of these rivers.

<sup>b</sup> So Volney, i. 237, note.

many small rivers of Europe which, aggrandized by the Atlantic tides, appear of much importance, although, intrinsically, of little more consequence than the Jordan. But the dignity of the Jordan arises from other circumstances than the volume of its waters or the extent of its course.

Seeing that the lakes of Palestine are intimately connected with the Jordan, their waters being, in fact, contained in enlarged hollows of its basin, it seems best not, for the mere sake of classification, to separate them from this natural connection, but to trace the river from its source to its termination, describing the lakes we have to pass in our way.

When several springs contribute their waters to form a river, it is often not easy to say which of them is to be regarded as its source; and perhaps the usual practice of selecting some one of them to be regarded as the source of the river in preference to the others, is nothing more than a convenient inaccuracy. It would seem that the spring which is most remote, and whose stream receives and is aggrandized into a river by the others which rise below it, has the best claim to be regarded as the source. But this is seldom the case; various accidental circumstances having, in most instances, operated to give the distinction to some one of the less remote springs. So, with respect to the Jordan, the stream which issues from the cave at Pania has been usually considered the source of that river: but its claim to this distinction may well be disputed; for, although very copious, it is by no means the most distant of the fountains of the Jordan. This opinion is by no means recent. Josephus mentions it as having been currently regarded as the fountain of the Jordan; but that the stream which proceeds from the cave originated in it, began to be questioned in his time. It was held that, in reality, the stream which came from the cave was carried thither after some secret manner [subterraneously?] from the lake of Phiala, which lake, as he states, lay about fifteen miles from Cæsarea Philippi,<sup>a</sup> not far on the right hand of the road as one journeys to Trachonitis. This lake had its name, Phiala [vial or bowl], by a very appropriate allusion to its cup-like appearance, its circumference being as round as a wheel. The water of this lake continued always up to the edges without sinking or running over. That it supplied the stream which issued from the cave at Pania was discovered in the time of Philip the tetrarch, when some chaff which had been cast into the lake was brought by the stream out of the cave.

Little reliance can be placed on such an experiment as this; and the conclusion deduced from it has not been supported by later observations. Indeed, in the first place, there seems to have been some difficulty in finding the lake of which the historian speaks. Seetzen, Burckhardt, and Irby and Mangles differ on this question. The lake which the latter found on their route by a new track, from Damascus to Pania, is the most important in itself, and agrees best in its situation and character with the intimations which Josephus offers. They describe it as a very picturesque lake, apparently perfectly circular, of little more than a mile in circumference, surrounded on all sides by sloping hills, richly wooded. The singularity of this lake is, that it has no apparent supply or discharge, and its waters appeared perfectly still though clear and limpid. A great many wild-fowl were swimming in it. Captain Mangles thinks, we doubt not justly, that this is the Lake of Phiala; but observes, that the alleged communication with the stream of Pania is impossible, as in that case the discharge must pass under a rivulet which some regard as the true source of the Jordan. We readily give up the alleged communication; but we do not know that it is rendered impossible by the circumstance stated. As the object of the chapter is to describe the various bodies of water in Palestine, it may be well to mention those which Seetzen and Burckhardt have *mistaken* for the Lake Phiala. The former places it two leagues to the east of Pania, and says that it now passes by the name of Birket el Ram. It is difficult to make anything of this: for while,

<sup>a</sup> In its origin this town was probably the Laish or Leshem, which the Danites took from the Canaanites and called Dan. Heathen writers called it Pania. Philip, the youngest son of Herod the Great, having enlarged and improved it, and made it the capital of his tetrarchy, gave it the name of Cæsarea, to which his own name was added, to distinguish it from the more important city of the same name on the coast. The name of Pania is that which is still preserved in the form of Banias. The visit of Jesus Christ to this place is recorded in Mark viii.

on the one hand, the distance is too small for the lake of Irby and Mangles,\* on the other, the lake which Burckhardt describes under the name of Birket el Ram is not east of Panias, nor two leagues from it, but upwards of twenty miles to the south-east, on the road to Jacob's Bridge.

Burckhardt informs us that what the Bedouins call the Birket el Ram, and the peasants Birket Abou Ermeil, is a reservoir of water, a few hundred paces to the south of the road, at the foot of Tel Abou Nedy, and is supplied by two springs which are never dry. One of these is in the bottom of a deep well in the midst of the Birket. Just by this reservoir are the ruins of an ancient town, about a quarter of an hour in circuit, of which nothing remains but large heaps of stones. Five minutes farther is another Birket, which is filled by rain-water only. The neighbourhood of these reservoirs is covered by a forest of short oak-trees. The rock of the mountain consists of sandstone and the basalt of the Haouran. Beyond these Birkets the road (towards Jacob's bridge) begins to descend gently; and at a distance of about four miles from them, just by the road, on the left, is a large pond, called Birket Nefah or Tefah, about 200 paces in circumference. Some of Burckhardt's companions asserted that the pond contained a spring, but some denied it; and from this he inferred that the water never dries up completely. "I take this," he adds, "to be the Lake Phiala, laid down in the maps of Syria, as there is no other lake or pond in the neighbourhood." He was evidently not aware of the lake which Mangles describes; and he would, doubtless, have admitted its superior claims to that which he indicates. Indeed, none of these Birkets are at all in the situation indicated by Josephus, being about twenty miles to the S.E. and S.S.E. of the cave at Panias.



[Supposed Source of the Jordan.]

To that cave we now return. It is on the north-east side of the village of Panias. The spacious cavern under which the river rises is shown in our engraving. Over the source is a perpendicular rock, in which several niches have been cut to receive statues. The largest of

\* By a singular oversight, Irby and Mangles fancy that their lake is that described by Seetzen and Burckhardt under the name of Birket el Ram, observing,—“It appears that this lake has only been remarked by Burckhardt and Seetzen; those who have gone from Damascus to Panias having taken the route by Rachia and Hasbeya.” But this was the route of Seetzen; and Burckhardt notices the Birket-el-Ram while travelling the *lower* route from Damascus to Jacob's Bridge. His Birket is full fifteen miles to the south of their lake; and he takes no notice of any lake or Birket when travelling, on another occasion, on a route partly parallel to theirs.

these niches is above a spacious cavern, and is six feet broad and as much in depth, with a smaller niche at the bottom of it. Immediately above it, on the perpendicular face of the rock, is another niche, adorned with pilasters, supporting a shell ornament. Here are two other niches near these, and twenty paces farther two more, nearly buried in the ground, at the foot of the rock. In the middle niche of the three represented in the engraving, the base of the statue which it once contained is still visible. Each of these niches has an inscription annexed to it; but Burckhardt could only decipher part of one of them. The niche in the cavern probably contained a statue of Pan, from whose worship the place acquired the name of Panias, and the whole mountain that of Panium; and in the other niches were probably other statues with suitable dedicatory inscriptions. There are a number of hewn stones about the source of the copious stream which here rises, and which may, perhaps, as Colonel Leake conjectures, have belonged to the temple of Augustus built here by Herod. The stream flows on the north of the village of Panias, where there is a well-built bridge and some remains of the ancient town. This stream is called by Burckhardt "the river of Panias," as he doubted its claim to be considered the source of the Jordan.

This traveller and some others would rather refer the source of this celebrated river to the spring which rises between three and four miles to the north-east of Panias. It is in the plain near a hill called Tel-el-Kadi. Here there are two springs near each other, one smaller than the other, whose waters unite immediately below. Both sources are on a level ground, among rocks of tufwacke. The larger source immediately forms a river twelve or fourteen yards across, which rushes rapidly over a stony bed into a lower plain. There are no ruins of any kind near the springs; but the hill over them seems to have been built upon, though nothing now is visible.

There is another stream, only noticed by Irby and Mangles, which, as being more remote, has a better claim, geographically, than either of the above, to be regarded as the source of the Jordan. It appears to rise from the southern slopes of Mount Hermon, at the distance of about twelve miles due east of the source at Panias. It was first noticed by Irby and Mangles, when they descended into a little plain, at the immediate foot of that mountain (Jebel Sheikh, or Mount Hermon), not long before they came to the lake Phiala. The stream "runs along the western side of the plain in a southerly direction, when its course turns more to the westward, and rushing in a very picturesque manner through a deep chasm, covered by shrubs of various descriptions, it joins the Jordan at Panias." That it does unite with the other two streams to form the Jordan is unquestionable, from the direction of its course; but that the union takes place at Panias seems very doubtful: at all events, it were to be wished that this assertion had been made by the travellers when they were themselves at Panias, rather than here, where it looks much like a conjecture.

The fourth stream which requires to be noticed is that which rises at Hasbeya, and which has been slightly noticed in a preceding page (cviii). On geographical principles its claim to that distinction would not be disputed, as it is the most remote and considerable of the streams which form the river. It is twelve miles of direct distance to the north-east of the source of the Panias river; and the road to Panias from that quarter lies through the valley of this stream. Its source is a large spring that wells out from the west side of Jebel Sheikh, near the village of Hasbeya, from which it takes the name of Moiet Hasbeya, or river of Hasbeya. There is a bridge over it at the village, and its banks are covered with numerous plantations of the mulberry-tree. Its ultimate course has not been well traced. Buckingham, who kept it in view almost from its source to a point about three miles west of Panias, says that it is there as broad, as deep, and as rapid as the Jordan near Jericho. It is said to take its further course to the lake Houle without joining any of the streams which have been described, or the single stream formed by their junction. This, if true, would explain how it happens that this stream was not regarded as the source of the Jordan. But even in case it does independently pursue its course to the lake, it might still be regarded as the source, if the name of Jordan be confined to the single stream which *issues from* the lake, leaving to those which enter it their separate denominations.

Seetzen, who was not acquainted with the stream described by Irby and Mangles, thus states the relative claims of the other three:—"The ancients give the name of the source of the Jordan to the spring from which the Pnias rises, and its beauty might entitle it to that name. But in fact it appears that the preference is due to the spring of the river Hasberia, so he calls it, which rises half a league to the west of Hasbeya, and which forms the longest branch of the Jordan. The spring of Tel-el-Kadi, *which the natives take for the source of the Jordan, is that which least merits the name.*"

After this statement, and before proceeding to what may be called the *history* of the question, it is well to see the connection of these three streams as far as it has been *ascertained*. Mr. Buckingham's route from Pnias was favourable to comparative observation, as it enabled him to take them all in succession, on nearly the same parallel, from east to west. His information is thus conveyed:—

"We quitted Pnias, and, going west for a little more than a mile, came to a small elevation in the plain, with a flat space on the top, like an artificial mound. It is called Tel-el-Kadi. Here the springs of the Jordan (?) rise, rushing out of five or six places, rendered difficult of access by rushes, trees, &c. These springs are called by the Arabs Nubb-el-Etheari. They form, even here, a pretty large basin, and go, in a single stream, to the southward, passing by a place where there is a white tomb called Seedy Yooda Ibn Yacoob, and keeping near the foot of the eastern range of hills. This tomb is, perhaps, a mile to the south of the springs here described; and two miles to the southward of that, the water of Pnias, which keeps always east of the Jordan [the stream from Tel-el-Kadi] thus far, here joins it, and they go together into the Bahr-el-Houle, which is said to be six hours, though it looks not more than ten miles from hence.

"We went up in a north-west direction from hence, and *in an hour* crossed the river Hheuzbháni<sup>a</sup> over a bridge of three arches, the stream being here both wide and deep, with steep rocky banks on each side. *The river goes from hence southerly into a small lake called Birket Jehouly, about five miles to the south of this; and from thence it continues to the Bahr el Houley,—a much larger lake,—not mixing its waters with those of the Jordan till then.*"

This passage is conclusive for the fact that the Hasbeya river is a large and important stream at a point between three and four miles to the north-west of Bnias, and between two and three from Tel-el-Kadi. The concluding passage, which we have marked by italics, is, in terms, no less conclusive for the point that this stream does not join, or, rather, does not receive, the others till it reaches the lake Houle. It is on this authority that the course of the Hasbeya has been represented in our own and some other maps of recent date; but rather because it is the *only* positive information which has been offered on the subject than that it is entitled to implicit reliance. It is to be regretted that the traveller does not state more distinctly the source of his information. He did not himself journey to the south of the bridge; and he does not say distinctly that his statement is founded on a survey from a commanding position. Such a survey over all the country to the lake Houle may, from more than one point, be obtained; and when he acquaints us that the lake *looked* not more than ten miles distant from Tel-el-Kadi, we are left to infer that his information concerning the course of the Hasbeya was so obtained. As it is, we consider this question remains to be settled positively.

In favour of the conclusion that this river does reach the lake Houle alone, is the fact that some of the old Biblical geographers do make a tolerably broad river enter the lake Houle to the west of the Jordan; but, then, their doing so is founded on what Reland seems to prove an erroneous interpretation of Josephus, and, accordingly, he rejects this stream from his map. D'Anville, however, restored it, and carried its source far off to the hills in the north-west; and in this shape it has been preserved, even to our own time. Unless we suppose that this was founded on some information that a river actually did enter the Houle at this point, not much of confirmation for the independence of the Hasbeya is obtainable from this circumstance.

<sup>a</sup> This is certainly the same that Seetzen calls Hasberia, and Burckhardt Hasbeya.



Against it is the fact, that no travellers who have been at the head of the lake Houle speak of any considerable stream, but the single one of the Jordan, as entering there. Pococke, Richardson, and Irby and Mangles, say not a word of any such stream. The information which the latter offer is most to the purpose, although somewhat negative. Departing from Panias, and "having been directed to follow the course of the Jordan, we endeavoured to perform that route. The beautiful wooded country does not continue more than two miles from Panias, when we entered into open, but rich plains. We found the ground very marshy; and, after winding about to find fords among the innumerable streams that water the plains, we crossed the Jordan itself. But the country on the other side was as full of marshes and ravines as that we had left, and in several places we nearly lost our horses. At length we succeeded in finding the road that leads to Safet, which runs at the foot of the hills on the other side of the plain."

They travelled in early spring—the watery season; and this extract will serve to remind the reader of the description of this plain which we gave in the preceding chapter. They crossed the Jordan between two and three miles above the lake; and, after that, they make no mention of crossing any other river, although, unless the Hasbeya had previously joined the Jordan, its stream *must* have been crossed by them after they had passed that river; and the passage, in the season of overflow, of a river which, ten miles above the lake, appears as considerable as the Jordan near Jericho, could hardly fail to have been noticed. Yet the only answer to this which occurs to us is, that, at a time of the year when so many powerful torrents, which they found difficult to ford, rushed towards the lake, the river might have been passed without being distinguished from them; and this is rendered the more *possible* by their not expecting to find such a river, as they appear to have entertained the opinion that the Hasbeya was one of the streams that joined the Jordan before entering the lake Houle.

On the other hand, Buckingham's visit was at a more advanced season of the year, when the marshiness of the country and the strength of the winter-torrents must have subsided, and many of the latter had dried up; and when, therefore, it was more easy to distinguish the course of such a river. So, upon the whole, there seems a doubt in the matter which it must be left for future observations to solve.

After this statement as to the physical state of the question, the reader will be the better able to apprehend the questions connected with this matter which have been elaborately discussed by the various writers on Biblical geography.

Although Josephus speaks of the stream from Panias as the visible source of the Jordan, he yet mentions a Little Jordan and a Great Jordan. In one place he tells us that the marshes of the lake Samochonitis (Houle) extend as far as the place Daphne, which, in other respects, is a delicious place, and has fountains, which supply water to what is called *little Jordan*, under the temple of the golden calf, whence it is sent into the *greater Jordan*.<sup>a</sup> The meaning of this was considered to be helped out by the statement of Jerome,<sup>b</sup> who says that the Jordan has its roots in Lebanon, and springs from two fountains, the one called *Jor* and the other *Dan*, and that the names join in the confluent stream.<sup>(1)</sup>

This statement has been repeated by various ancient and modern writers. Some of them were actual travellers; but whether they speak after Jerome, or on their own information, it is not possible to find. The only one who professes to acquaint us with the distance of the two fountains is Philostorgius,<sup>c</sup> a writer of the fifth century, who makes it 160 stades, a distance much greater even than that between Panias and the sources of the Hasbeya, but agreeing, even by remote approximation, only with these two, and showing that the distance was, at any rate, deemed to be greater than the mile which separates the sources of the streams of Panias and Tel-el-Kadi.

On this information (excepting that as to distance) the old maps of Ziegler, Solinus, Adrichomius, Quaresmius, Fuller, and others, deduced one stream from some arbitrary point, and called it *Jor*, and another from the source at Panias, to which they gave the name of *Dan*. They made the distances, generally, too small for that between the sources of Panias

<sup>a</sup> De Bell. l. iv. c. 1.

<sup>b</sup> See Matt. xvi.

<sup>c</sup> Cited by Salsmasius in a note on Solinus, cap. xxxviii.

and Hasbeya, and too great for that between Panias and Tel-el-Kadi.<sup>a</sup> When these streams are made to unite, the name Jordan is given to the enlarged river formed by their confluence. In all cases they consider that the "Little Jordan" was that *not* coming from Panias.

Lightfoot objected to this state of the question, with which he does not, however, indicate much acquaintance; as he assumes that the theory of two originating streams arose from Josephus's mention of a great Jordan and a little Jordan, and are intended to represent them. He proves, at large, that both Josephus and the Talmudists place the spring of the Jordan at Panias, *and name no other*; and that this Panias was at the springs of the "lesser Jordan," or, in other words, that, while Josephus distinctly traces the Jordan to the source at Panias, he as distinctly assigns that, and no other, as the source of the "lesser Jordan," without giving to the great Jordan any separate source. Thus, he alleges there is no authority in Josephus for two distinct sources of the Jordan, and seems unacquainted with the authority on which they were exhibited. He might well, therefore, express his amazement that the fountain of the lesser Jordan should be known, and that of the supposed greater unknown. He, therefore, concludes,—“We think, therefore, that Jordan is called the Greater and the Less, not upon account of two fountains, different and distinct from one another, but upon account of the distinct greatness of the same river. Jordan, rising out of Panias, was called Little until it flowed into the lake Samochonitis; but afterwards coming out of that lake, when it had obtained a great increase from that lake, it was thenceforth called Jordan the Greater. Samochonitis received Little Jordan and sent forth the Great. For since both that lake and the country adjacent was very fenny, the lake was not so much increased by Jordan flowing into it, as it increased Jordan flowing out of it.” Therefore he represents the Jordan as a single stream, issuing from Panias, and called the Little Jordan from its source to the lake, and not, till it leaves the lake, acquiring the name of the Great Jordan. This view of the question received more authority and importance from its subsequent adoption by Reland.

The greatly enlarged information which we now possess enables us to see a little more clearly into the matter than these old theoretical geographers.

It seems to be proved that Josephus means the river of Panias by the Little Jordan, and that he describes it as running into another river called the Great Jordan, not as forming the Great Jordan by its junction with another river; and, if the Great Jordan were not formed till the river leaves the lake, he would surely have described the Little Jordan as running into the lake, rather than as flowing into the Great Jordan.<sup>b</sup> His account, therefore, may be taken to concur in assigning two distinct sources to the Jordan; and seeing that one of these sources is that which issues from the cave at Panias, the other only remains to be sought.

If the river of Hasbeya does *not* pursue its course alone to the lake, but receives the stream of Panias in its way, the fact could not be unknown to Josephus, and we might deem this to be the Great Jordan into which the lesser runs. But if the claim of this river be regarded as doubtful, for the reasons which we have stated, then the river noticed by Irby and Mangles would seem to take the next place; and the distance given by Philostorgius would appear to point to one of these rather than to any nearer source; and his statement seems the more entitled to attention, as he was nearer in time to Jerome than any other writer who mentions the subject. We have, however, satisfied ourselves that later travellers, commencing two or three centuries after Philostorgius, considered the Jor and Dan as represented by the proximate streams of Panias and Tel-el-Kadi. It is true they do not name the latter, or state the exact distance; but their indications of proximity are too distinct to be mistaken.<sup>c</sup> It might be well, however, to recollect that the Holy Land had, in the interval, fallen into the hands of

<sup>a</sup> Fuller is an exception. He makes the distance just enough for that between the sources of Panias and Hasbeya; and instead of calling the first Dan and the other Jor, as usual, reverses this order. In all the maps the second source is made to be east of that at Panias.

<sup>b</sup> The following are the passages of Josephus which bear more or less on the question:—'Antiq.' lib. v. cap. 2; viii. 8; xv. 13; xviii. 3; 'De Bello,' lib. i. cap. 16; iii. 15 and 35; iv. 1.

<sup>c</sup> Compare Willibald, (A.D. 765) 'Hodæporicon, et Vita,' in Canasius, tom. ii. 111, 119; Arculphus in Adamn. Scotus, 'de Locis Sanctis,' l. ii. c. 16; Brocard (A.D. 1230) in Canasius, iv. 13; Baldeusel (A.D. 1336) in idem, 362. Willibald, the earliest of these, is very clear on this point.

the Arabians, in consequence of which the actual knowledge of the country had declined among European Christians, pilgrimages having become more rare, and travelling difficult and dangerous. It is easy, therefore, to conceive that the few who penetrated so far as Pania, easily satisfied themselves that the two proximate streams were the two sources of the Jordan, the Jor and the Dan, of which they had read. It was so natural for them to conclude so, that it is likely they did it; and, therefore, their conclusions are no evidence of more ancient opinions on the subject.

Burckhardt informs us that the stream from Tel-el-Kadi still bears the name of Dan, or (as he spells it) Dhan; and a little farther on, he adds, "I was told that the ancient name of the river of Bania was Jor (Djour), which added to the name of Dhan made Jourdan: the more correct etymology is probably Or Dan. Lower down, between the Houle and the lake of Tabaria, it is called Orden by the inhabitants: to the southward of the lake of Tabaria it bears the name of Sherya, till it falls into the Dead Sea."

The question to which we have given this rather large portion of our attention is not of much geographical importance: but its critical and historical interest is considerable; and the reader is so liable to be perplexed by the remarkable differences which maps and books exhibit, that this attempt to elucidate the whole question will, perhaps, be regarded as a useful service. It has also been our desire to make travellers acquainted with the points on which information is still wanted.<sup>a</sup>

The description given in the last chapter, and the incidental notices in the preceding paragraphs will give some notion of the enclosed land—the head of the Jordan valley—which is so abundantly watered by the perennial streams which we have described, and by the innumerable torrents which rush down in every direction from the surrounding hills from the middle of autumn to the end of spring. From these accounts we may understand the glowing terms in which it was described by the Danites from the thirsty south:—"We have seen the land, and behold it is very good—a large land—a place where there is no want of anything that is in the earth."<sup>b</sup>

Before quitting it entirely, it may be well to state the leading geographical incidents of the northern portion of the valley which encloses the upper portion of the Jordan and two of its lakes.

This valley, commencing at the roots of Anti-Libanus—or rather of that portion of it which bears the name of Jebel-es-Sheikh—takes the name of Wady Sezeban, or Steziban, and Buckingham says that it continues all the way to be so called,<sup>c</sup> even to the Dead Sea, although the part south of the Lake of Tiberias is more frequently called El Ghor. He further states,—"The name of Jebel-el-Wast, which is applied to the Anti-Libanus of the ancients, extends even to the southward of the Jebel-es-Sheikh as far as Pania. From thence, southerly, to the eastern shore of the Lake of Tiberias is an even range of hills, called Jebel Jowalan, which, with the portion of Jebel-el-Wast from Hibl thus far, forms *the eastern boundary* of Wady Stezeban. *The western boundary*, which is also a range of hills of no considerable height or marked form, is called Jebel Jowaleen. The valley itself extends, perhaps, thirty miles from its commencement at Hibl to its interruption at the north end of the Lake of Tiberias, where the water occupies all the breadth of the plain. To the northward of the Bahr-el-Houle it varies in breadth from five to ten miles, and to the southward of Pania it seems well cultivated throughout."<sup>d</sup>

<sup>a</sup> Canasius, 'Thesaurus Monumentorum Ecclesiasticorum et Historicorum,' tom. ii. iv., as before cited; Adrichomius, 'Theat., T. S.' 122; Quaresmius, tom. ii. lib. vi. cap. 4; 'Terræ Sanctæ Descriptio,' auctore Jacobo Zieglero, p. 21; 'Alteræ Descriptio,' auctore Wolfgango Weissenburgio, p. 128; C. Julii Solini 'Polyhistor,' cap. xlviii.; Lightfoot's 'Chorographical Century,' chap. lxvii.; Reland, 'Palestina,' cap. xliii.; Seetzen, 16, &c.; Burckhardt, 39-43, 314; Irby and Mangles, 283-290; Buckingham's 'Arab Tribes,' 401-406. It may prevent misapprehension if we state, that in this and other notes in which reference is made to Latin authorities, the names of the authors have always, unless through inadvertence, been intentionally reduced to the nominative. It has even been considered best to give the national name of the author, when it could be ascertained, freed altogether from its Latin disguises.

<sup>b</sup> Judges, xviii. 9, 10.

<sup>c</sup> This is not at variance with the statement already cited from Burckhardt: for what he gives are the names of the subdivisions of the river; whereas *this* applies to the *valley* through which the river flows.

<sup>d</sup> Not "throughout," but to a very considerable extent.

It should be observed that the distance from the head of the valley to the head of the Lake Houle varies considerably with the time of the year, as the dimensions of the lake are greatly contracted during summer. And although the spring of Panias rises from among the mountains which form the head of the valley, it is not at the head of the valley from which Buckingham computes. The proper head of the valley is about five miles to the north of Panias. The distance from the head of the valley to the lake is about fifteen miles; but only ten from Banias.

The *BAHR-EL-HOULE* <sup>a</sup> is called, in the Old Testament, "THE WATERS OF MEROM," <sup>b</sup> and is celebrated chiefly from the defeat of the confederate kings of Canaan by Joshua on its borders. It is not mentioned in the New Testament. Josephus calls it the *LAKE SAMOCHONITIS*, which appears to be a Greek rendering of the native name Samaco, which it bears in the Jerusalem Talmud. But in the same Talmud it is sometimes called "the Sea of Cobebo," while the Babylonian Talmud names it "the Sibbechean Sea."

The dimensions of this lake are variously stated, probably in consequence of its different appearance at different times of the year. In the season of flood it seems almost to rival the Lake of Tiberias in extent; while, by the latter end of summer, it has shrunk to about half its former dimensions. Josephus seems to make it seven miles long by half that breadth: (\*) Pococke seems to allow this length, but says it cannot be more than two miles broad, except at the northern extremity: Mariti makes it six (Italian?) miles long by four broad: Roger reduces it to one league long by a less breadth; while the latest observer, Dr. Robinson, describes it as eight or ten miles long by four or five miles broad, but adds, that the northern *half* is a mere marsh covered with tall reeds or flags. This observation was, it appears, made in June. At a more advanced season of the year, this mere marsh, to which the northern part of the lake is reduced in June, becomes quite dry, bringing down the dimensions to about the lowest estimate. On the other hand, the lake is not at the highest in June, but is then on the decline. Earlier in the year, the marshy northern portion is deep water and of greater extent. But by the time the northern half is dried up, the southern portion itself becomes little more than a marsh. The contraction is more in length than in breadth; and by casting up the above estimates, it will appear that Josephus gave nearly the average dimensions.

The lake does not occupy the centre of the valley. It is much nearer to the eastern than to the western side. There is a space of about five miles between its border and the western hills; but the distance from its opposite border to the eastern hills is much less considerable.

In the marshes which surround this lake, or rather in the marshy parts of the lake, the reeds with which the Orientals write grow abundantly, as well as other reeds with which arrows and lances are made. The outer border is surrounded by shrubs and trees—many of them fruit-trees—which in the distance present the aspect of a forest. This is a resort of various wild animals when driven from the mountains by the snows of winter, or from the plains by the heat and drought of summer; but few of them make it their constant abode. Water-fowl are also most abundant about the lake, particularly on the marshes to the north.

The banks of the lake are very low; but the lake itself is on a considerably higher level than the Lake of Tiberias. It is inhabited only on the eastern borders; and even there, if we rightly understand Burckhardt, there are only two villages, called Es-Seira and El-Deir. The south-west shore bears the name of Melaba, from the ground being covered with a saline crust. The lake abounds in fish, and its fisheries were, in the time of the last-named traveller, rented of the Mutsellim of Saffud by some fishermen of that town.

Pococke informs us that "the waters are muddy, and esteemed unwholesome, having something of the nature of the water of a morass. This is partly caused by their stopping the brooks on the west side, in order to water the country, so that the water passes through the earth into this lake: it is also, in some measure, owing to the muddiness of its bed. After the snows are melted and the water fallen, it is only a marsh, through which the river Jordan

<sup>a</sup> We take this as the most received orthography. Buckingham spells it Houly; Dr. Robinson Hüleh.

<sup>b</sup> Joshua xi. 5.

runs. The waters by passing the rocky bed towards the sea of Tiberias, settle, purify, and become fit for use."<sup>a</sup>

The distance between the Lakes Houle and Tabaria is estimated by Poccoke at ten miles, which agrees nearly enough with most other statements. In consequence of the higher level of the Lake Houle, and the narrow and rocky character of its channel, the Jordan flows down to the Lake of Tabaria with considerable rapidity and noise; but in the two first and two last miles, its course is more quiet than in the intermediate distance. In this part of its course the stream is almost hid by the shady trees which grow on each side and make the prospect most delightful. The trees are chiefly of the plane family.

Poccoke travelled along the western border of the river and the lakes, from the town of Tabaria to the head of the Lake Houle. Dr. Richardson followed part of the same track, but turned off to the N.N.W. before he reached the southern extremity of that lake. The following, therefore, applies to most of that part of the river which lies between the two lakes. "The river is bounded by a chain of mountains [hills] on each side. On the east they rise up almost precipitously from the bed of the river. On the west there is a fine fertile vale, averaging about half or three-quarters of a mile broad, between the river and the mountain. The mountains on the east are bolder, and continue with little interruption all the way. On the west side, along which we travelled, the interruptions are frequent, and charming defiles, irrigated by small streams of water, pass off." After some time they came to a point where "the river passed through a small lake, which at first sight appeared to us to be a continuation of the Lake Gennesareth; but when we obtained a view of it from higher ground, we were satisfied that it was not." From the description, this lake seems to have been about midway between Jacob's Bridge and the Bahr-el-Houle. We have felt much difficulty about this lake. There can be no doubt that Dr. Richardson saw it: but it is not mentioned by any other travellers, not even by those who have been in situations to overlook the whole course of the river between the Lakes of Houle and Tabaria; and Dr. Robinson, who in his journey particularly watched the statements of Richardson, distinctly affirms that between the two lakes "the Jordan flows in a narrow valley, and forms *no intervening lake*." This, we doubt not, is intentionally levelled at Dr. Richardson's statement. The only explanation which can remove this difficulty is to suppose that the expanse of water which this traveller tells us he saw, was merely a temporary exhibition in the season of overflow, at which time his visit took place, and which disappears when the waters fall. But in the present state of the question it seems best to wait for further information than to form any decided opinion.

Leaving this question, it only remains to state that the Jordan ultimately advances to the Lake of Gennesareth in a widened but still rapid stream among the nebbek-trees and thick groves of oleanders to which it gives life.<sup>a</sup>

THE LAKE OF TIBERIAS is, from its associations, the most interesting body of water in the Holy Land—far more so than the Dead Sea, although the latter is considerably larger, and is, physically, much more remarkable. Neither of these lakes is mentioned or alluded to in the Old Testament as often as might be expected. In the New Testament the Dead Sea is not once mentioned; but the name of the Lake of Tiberias very often occurs, as the town of Capernaum, on its border, was the usual residence of Christ, and the lake or its shores the scene of some of the most remarkable transactions of his life.

It was usual for the Jews to call every natural expanse of water *a sea*, which name was even applied, partly by metaphor, doubtless, to the brazen reservoir—"the brazen sea"—which stood in the court of the Temple. Accordingly, the evangelists Matthew, Mark, and John, being native Jews, invariably call the Lake of Tiberias a "sea;" but Luke, who was a native of Asia Minor, and whose geographical terms are always more distinctive, calls it generally a "lake."<sup>c</sup> The present inhabitants, like those of ancient times, still call their water *a sea*,

<sup>a</sup> Joseph, de Bello, lib. iv. cap. 1; Poccoke, ii. 71; Roger, 68; Mariti, ii. 325; Burekhardt, 316; Irby and Mangles, 290; Buckingham, A. T. 309; Richardson, 450, 451; Dr. Robinson, in 'Am. Bib. Repos.' No. 34, p. 430.

<sup>b</sup> Poccoke, 72; Burekhardt, 514; Richardson, ii. 445, 446; Dr. Robinson, 430; Lindsay, ii. 91.

<sup>c</sup> Fuller adjusts the matter in his own peculiar way:—"Indeed, among lakes, it may be accounted for a sea, such the greatness; among seas reported for a lake, such the sweetness and freshness of the water therein."

and reckon it and the Dead Sea to the south of them to be the two largest known, except the great ocean.

It is mentioned by many names. The most ancient seems to have been that of "Sea of Cinnereth,"<sup>a</sup> or, in the plural form, Cinneroth.<sup>b</sup> The Targumists, who sometimes accommo-



[Lake and Town of Tiberias.]

dated the old names to those which existed in their time, use "the Sea of Genesar;" sometimes "of Genosor," or "of Ginosar." Josephus uses "Gennesar."<sup>c</sup> The Talmudists employ the same names, but more usually call it "the Sea of Tabaria,"<sup>d</sup> which is exactly the name it now bears, being the Oriental form of *Tiberias*. The evangelists employ both the principal names, "the Lake of Gennesareth,"<sup>e</sup> "the Sea of Tiberias,"<sup>f</sup> and, sometimes, "the Sea of Galilee,"<sup>g</sup> from the bordering province, on the west, to which the lake was considered to belong.

There was a city and district of the name of Cinnereth<sup>h</sup> on the borders of the lake from which it appears to have derived its name.<sup>1</sup> The name Cinnereth might easily pass into Gennesareth, which name, as applied to the lake, is expressly declared by Josephus to have been derived from an adjacent district, which district appears to have bordered on, if it did not include, Tiberias. The Jewish writers tell us that the district itself took this name from the delightful gardens and paradises which were there. Some make them royal gardens, deducing the name from גני סרים, *geni sarim*: "so that," says Lightfoot, "by the Jews' etymology, the name was taken from some royal gardens that lay upon it; which may very well be, since Herod's palace was at Tiberias, and as from the royalty of that city the sea was

<sup>a</sup> Num. xxxiv. 11; Josh. xiii. 27; כנרת.

<sup>b</sup> Josh. xi. 2; xii. 3; כנרות.

<sup>c</sup> Γεννησαρ.

<sup>d</sup> טבריא.

<sup>e</sup> Luke, v. 1. The *et etā*, if not borrowed from the old name, may be regarded as a Greek termination for euphony. So in Nazareth, of which the proper Hebrew name is *Nazar*.

<sup>f</sup> John, xxi. 1.

<sup>g</sup> John, vi. 1.

<sup>h</sup> Josh. xix. 35.

<sup>1</sup> Others conceive that it is so named from *Κίθαρος*, a harp in Hebrew, which it is said in shape to resemble: sure the high winds sometimes make but bad musick (to the ears of mariuers) when playing thereupon.—FULLER.

called 'the Sea of Tiberias;' so, possibly, from the orchards and gardens upon it, it might be called 'Genesar,' or the place of princely gardens."

The dimensions of this lake have been differently stated by different authorities; <sup>a</sup> and this is much more remarkable in the present case than in that of the Lake Houle, as the Lake of Tiberias has its boundaries very distinctly marked by the mountains by which it is enclosed. These differences doubtless proceed from the different experience of travellers in measuring distances by the eye. As experienced mariners can make the best estimates, by the eye, of distances over water, Mr. Buckingham seems the traveller on whose opinion we should be most disposed to rely; and he says, "Its greatest length runs nearly north and south from twelve to fifteen miles, and its breadth seems to be in general from six to nine miles." Dr. Clarke's naval friends also computed *the breadth*, from Tabaria to the opposite shore, at six miles; of the *length* they made no estimate, as the whole extent of the lake is not visible from that place. Taking Buckingham's highest number, it offers, for the length of the lake, a fair average deducible from the other statements, particularly if we reckon that Josephus used not the Roman but the Greek itinerary stade in his measurements.

Viewing the whole extent of the lake from its southern extremity, Mr. Hardy compares its figure to that of a boy's kite, or of a bird flying, which last seems the better comparison of the two.

The Jewish writers enlarge in the most glowing terms on the excellencies of this lake, and, considering their limited materials for comparison, they had reason to do so. "Seven seas," says the Talmud, "have I created, saith God, and of them all have I chosen none but the Sea of Gennesareth."<sup>b</sup> Josephus dwells on the sweetness and softness of its water, of its pebbly bottom, and, above all, of the salubrity of the surrounding atmosphere. He affirms that the water was so cold in its nature, that its temperature was not affected by being exposed to the sun during the hottest season of the year. He also expatiates largely on the extraordinary fertility and valuable products of the land of Gennesareth, by which he evidently means the tract on the eastern borders of the lake.<sup>c</sup> All this praise of the water and so forth is allowed by modern travellers; and what is said of the peculiar fertility of its borders is true to an extent which a more fitting place will require us to notice.

Of all modern descriptions, perhaps that of Dr. Clarke is the best in conveying a general impression of the scene which is offered, from the summit and descent of the western mountains. It is true that, like many other of this ardent traveller's pictures, it is highly coloured and the shades skilfully softened; but what he omits is easily supplied from other sources. His point of view was very favourable; <sup>d</sup> and we observe that those who, like him, describe it as viewed from the hills, use much warmer language than those who picture it from the shore.

"A view was presented, which, for its grandeur, independently of the interest excited by the different objects contained in it, has nothing equal to it in the Holy Land.

"From this situation we perceived that the plain over which we had been so long riding [from the west] was itself very elevated. Far beneath appeared other plains one lower than the other, in a regular gradation, reaching eastward, as far as the surface of the Sea of Tiberias. This immense lake, almost equal, in the grandeur of its appearance, to that of Geneva, spreads its waters over all the lower territory. Its eastern shores exhibit a sublime scene of mountains towards the north and south, and they *seem* to close in at either extremity; both towards Chorazin, where the Jordan enters, and the *Aulon*, or *Campus Magnus*, through which this river flows to the Dead Sea. The cultivated plains, reaching to its borders, which we beheld at an amazing depth below our view, resembled, by the different hues their various produce presented, the motley pattern of a vast carpet. To the north appeared many snowy summits

<sup>a</sup> Josephus, 140 (some copies have 100) stades by 40; Pliny, 16 (Roman) miles by 6; Munster, 80 R. miles in compass; Bunting, 12 miles by more than 4; Roger, 6 leagues by from 2 to 3; Biddulph, 24 miles by 15; Sandys, 12 miles by 6; Hayes, 10 or 12 miles by 4; Mariti, 18 miles by 6; Clarke, 6 miles broad; Jowett, 20 miles by 12.

<sup>b</sup> But it is possible that, as Lightfoot conjectures, this was invented for the praise of the famous Jewish university at the town of Tiberias, contiguous to the lake.

<sup>c</sup> Joseph. de Bell. lib. iii. c. 10.

<sup>d</sup> In fact, no one has described the lake from the same point of view, which was the top of the (so called) Mount of Beatitudes.

towering beyond a series of intervening mountains. We considered them as the summits of Libanus; but the Arabs belonging to our caravan called the principal eminence Jebel-el-Sieh.<sup>a</sup> The summit was so lofty that the snow entirely covered the upper part of it, investing all the higher part with that perfect white and smooth velvet-like appearance, which snow only exhibits when it is very deep.”

Continuing his way over the plain, before reaching the edge of the steep declivity which conducts down to the shore, the same traveller writes:—“The lake continued in view to our left. The wind rendered its surface rough, and called to mind the situation of our Saviour’s disciples, when, in one of the small vessels which traversed these waters, they were tossed in a storm, and saw Jesus, in the fourth watch of the night, walking to them upon the waves. Often as the subject has been painted, which combines a number of circumstances favourable to a sublime representation, no artist has been aware of the uncommon grandeur of the scenery memorable for the transaction. The Lake of Gennesareth is surrounded by objects well calculated to heighten the solemn impression made by such a picture; and, independently of the local feelings likely to be excited in its contemplation, it affords one of the most striking prospects in the Holy Land. It is by comparison alone that any due conception of its appearance can be communicated to the minds of those who have not seen it. Speaking of it comparatively, it may be described as longer and finer than any of our Cumberland and Westmoreland lakes, although it be, perhaps, inferior to Loch Lomond in Scotland. It does not possess the vastness of the Lake of Geneva, although it much resembles it in certain points of view. In picturesque beauty it perhaps comes nearest to the Lake of Locarno in Italy, although it be destitute of anything similar to the islands by which that majestic piece of water is adorned. It is inferior in magnitude and, perhaps, in the height of the neighbouring mountains, to the Lake Asphaltites; but its broad and extended surface, covering the bottom of a profound valley, surrounded by lofty and precipitous eminences, when added to the impression under which every Christian pilgrim approaches it, gives it a character of unparalleled dignity.”

From lower points of view, on the descent to the lake, and from the plain by which the lake is bordered, much of all this grandeur is lost; and much that looks beautiful in the distance becomes bald and barren in the nearer view. That nearer view is still grand, especially from the plain at the northern extremity of the lake. On the east rise the mountains, not precipitously, but rolling back from the shore, green and verdant after rain, but destitute of trees. On the west, hill rises above hill in beautiful succession, and the loftiest visible summit is crowned with a city,<sup>b</sup> whose commanding position is probably unequalled in the world. In two places the mountains here come down to the lake; the rest is a beautiful and uncultivated plain—that rich and fertile “land of Gennesareth,” which, for its combination of natural advantages—soil, scenery, climate, temperature—is, perhaps, exceeded by no other spot on earth. In winter and spring this plain is traversed by numerous torrents, some of which are so large and rapid as not to be passed without difficulty. “Nothing can surpass the beauty and grandeur of the surrounding scenery,” says Elliot; and he had travelled widely.

The feathered tribes seem to make the lake a favourite resort. Multitudes of song-birds harbour in the northernmost groves, and their innumerable happy voices mingle with the rush of waters, where the river hastens to the lake. The margin and surface of the lake itself presents large flocks of storks, wild ducks, and diving birds; pelicans are not wanting; while here and there vultures are assiduously engaged with their carrion prey: or eagles, heavily flapping their broad wings, rise to their aeries in the mountains. But when the heat

<sup>a</sup> Jebel Esheikh, or Hermon, concerning which see p. xxxii. The lower points of view, from which most travellers describe the lake, do not take in this magnificent background; hence, perhaps, the comparative tameness of their descriptions. Stephens rather sneers at the comparison to the lake of Geneva, particularly on the score of the *absence* of a Mont Blanc; whereas, in fact, the very *presence* of Mount Hermon, capped with snow, in the distance, probably first suggested the comparison to Dr. Clarke. Clarke was right in describing impressions from what he saw, and *he did* see the snowy Hermon; and Stephens is right in describing from what he saw—and *he could not* see the splendid background which that mountain forms.

<sup>b</sup> Safet.



of the summer sun—intensely concentrated on the borders of this deep basin—has absorbed all the moisture which the earth contained, and utterly dried up the green herbage which gave a cheerful aspect to the scene, the effect of the whole, in the entire absence of trees, is very different,—more dull, heavy, sad, but not less, perhaps, in unison with the general tone of feeling with which the Christian pilgrim is prepared to regard this memorable lake. Its surface is usually in a state of dead calm; and, in the universal stillness, the gentle plash of its water upon the pebbles of the shore is distinctly heard, and is, indeed, almost the only sound that strikes the ear. Not a single boat of any kind is seen upon the lake; and, now that the Arab has removed his tents to the higher country, the eye may wander around its borders in vain, seeking for any other signs of habitation than the mean town of Tabaria, and one or two miserable villages. The saddened traveller may gaze for hours over the scene without observing a single human being, or, indeed, any living creature, save the large water-fowl, whose sole presence tends rather to increase, than to diminish, the desolation of the view.

How different this view from that which was presented to the eye about the time of Christ! Then the borders of the lake were thickly populated, and the eye rested in turn upon fortresses and cities, towns and villages. There was not only the royal city of Tiberias, but the woe-doomed cities of Chorazin and Capernaum, both the frequent witnesses of His "mighty works,"—the latter his most usual place of residence,—"exalted unto heaven" once, but now so utterly "cast down" that men know not where it stood. There also was Bethsaida,—"the city of Andrew and Peter,"—Hippos and Gamala,<sup>a</sup> Tarichea and Beth-Meon, Ammaus and the strong Magdala; doubtless with many other places of less note, the names of which history has found no occasion to preserve. Then, also, the surface of the lake was enlivened with the numerous boats passing constantly across, and from town to town, with passengers and goods, while the fishers launched forth to cast their nets in the deep waters. Then the shores were everywhere richly planted and cultivated, and offered numerous delightful gardens and paradises, while numerous people, busy or unoccupied, were seen passing to and fro; and then, instead of this silence, were heard the voices of men calling to each other, the joyous shouts of happy children, the sound of the song and harp, the noise of the millstones, and the lowing of the herds upon the sides of the hills. Amidst the present vacancy and silence, the mind can better fill out the details of such a picture, than were the scene actually occupied with other and different objects than those which the imagination wishes to supply.

As the waters of the lake lie in a deep basin, surrounded on all sides by lofty hills, except at the outlet and entrance of the Jordan, long-continued tempests from any quarter are unknown. This is also true, and for the same reasons, of the Dead Sea. But these same local features, which preclude any long agitation of its surface, render it liable to whirlwinds, squalls, and sudden gusts. But these, as in every similar basin, are of short duration, and the most furious squall is speedily followed by a calm. Winds from the south-east are those by which a boisterous sea is most usually raised in this lake.

It has been affirmed of this—as of other lakes which receive and discharge a river—that the Jordan makes its passage through it without mingling its waters.<sup>b</sup> We only know that its course through the middle of the lake is distinctly marked. There is a current throughout the breadth of the lake, even to the shore; and the passage of the Jordan through it is observable by the smooth state of the water's surface in that part.

It is, probably, on account of this current that the old Jewish doctors decided that "the sea of Tabaria is like the gliding waters." It was once a mighty question whether those waters were fit for use in which unclean fish swam about with the clean; and the conclusion

<sup>a</sup> A few of these names are collected from the Rabbins. We do not know that Gamala was visible from the bed of the lake, but the mountain, from the shape of which it took its name (which means *Camel*), and on which it stood, is one of those which bound the lake.

<sup>b</sup> "The river of Jordan runneth through the midst of this sea, and minglieth not therewith, but preserveth his own stream entire: which some impute to the swiftness, yea rapidness, of his course, not at leisure to take notice of (much less to unite with) any water he meets in his way, before he comes to his journey's end at the Dead Sea."—FULLER.

was,—“Flowing and gliding waters are fit, those that do not glide are not fit; and the lake of Gennesareth is to be numbered with gliding waters.” After the praise of its water, which has, in a former page, been adduced from Josephus, it may be well to add that it is perfectly clear and sweet, although it receives several hot saline springs, so impregnated with gases that they change the colour of the stones over which they pass. Dr. Clarke describes it as being clear as the purest crystal, sweet, cool,<sup>a</sup> and most refreshing to the taste. He swam to a considerable distance from the shore, and found it so limpid that he could discern the bottom covered with shining pebbles. Among these stones was a beautiful but diminutive kind of shell, being a nondescript species of *Buccinum*, to which he gave the name of *Buccinum Galilæum*. He and his friends amused themselves with diving for specimens; and the very circumstance of their being able to discover such small objects beneath the surface may prove the high transparency of the water. The lake generally presents a dark appearance, on account of the high mountains by which it is enclosed.

The fishing operations upon this lake which were anciently of so much importance, and connected with which so many interesting circumstances are recorded in the New Testament, have altogether ceased. There is not, or was not very lately, a single boat upon the lake. There were none even in the time of D'Arvieux (1660). Hence the country derives no advantage from the immense quantity of very excellent fish which now, as formerly, the lake contains. A small supply is obtained by nets cast from the beach; but this process is necessarily so unproductive, that, even at Tiberias, fish bears the same price per pound as meat. Most travellers have, naturally, desired to eat fish at this place, but have not always succeeded. Hayes was prevented by the Lenten prejudices of his Greek host;<sup>b</sup> Irby and Mangles almost lived on fish, and praise it highly. According to them, there are excellent fish, but the variety is small. Stephens, in his journey along the shore, observes, “I thought to enhance the interest of this day's journey by making my noon-day meal from the fish of the Lake of Gennesareth; and having on my way up seen a net drying on the shore, I aroused the sleeping Arabs, and they had promised to throw it in for me; but when I returned I found that, like Simon Peter and the sons of Zebedee, ‘they had toiled all the day and had caught’ nothing.” Elliot and his friend were more fortunate. They halted at the same place (near the presumed site of Bethsaida), and requested a man to throw his line and let them taste the produce of the lake. In a few minutes each of them was presented with a fish broiled on a plate of iron, according to the custom of the country,<sup>c</sup> and wrapped in a large wafer-like cake, a foot in diameter, of which one was spread as a table-cloth and two others served for napkins. “Thus,” observes the traveller, “we made a repast, on the banks of the Sea of Tiberias, of what was almost literally ‘five loaves and two small fishes.’”<sup>d</sup>

The Great Jordan, to which all general statements refer, may be said to be formed as soon as the river leaves the Lake of Gennesareth. The valley through which it passes to the Dead Sea has already been fully described (pp. cix., cx.); and it has been stated that the proper bed is a lower valley, about three-quarters of a mile in breadth, covered with high trees and the most luxuriant herbage. In the winter the swollen river inundates the plain in the bottom of this lower valley, but never rises to the level of the upper plain of the Ghor, which is at least forty feet above the level of the river. The wild animals which harbour during summer amid the shade and freshness of the lower valley are then obliged to ascend to the upper plain, and seek some other refuge for the winter. This swelling of the river, and the retreat of the wild animals before it, are more than once alluded to by Jeremiah.<sup>e</sup>

The Jordan, even in this part of its course, is fordable in many places during summer; but

<sup>a</sup> “In the water of the lake my thermometer stood at 70°, in the sun at 90°.”—FISK. This was in November.

<sup>b</sup> The Greeks do not, like the Roman Catholics, indulge themselves with fish during their fast-days.

<sup>c</sup> Luke, xxiv. 42.

<sup>d</sup> Lightfoot, ‘Chorog. Cent.’ chap. lxx; Roger, 62, 63; D'Arvieux, ii. 176, 177; Hayes, 125-130; Mariti, ii. 157; Clarke, iv. 199-225; Burckhardt, 332; Buckingham, chap. xxvi.; Irby and Mangles, 296; Jowett, 172-176; ‘Memoir of Rev. Pliny Fisk,’ Boston, U. S. 344-7; Hardy, 287-241; Skinner, ii. 283, 291, 292; Stephens, ii. 329-333; Elliot, ii. 342-350; Lindsay, ii. 89-93.

<sup>e</sup> “Thou land of peace, thou mayest have confidence; yet how wilt thou do in the swelling of Jordan?” xii. 5. “Behold as a lion cometh up, a strong one from the swelling of Jordan,” xlix. 19; repeated in chap. l. 44.—Blayney's Translation.

the few spots in which it may be crossed during the rainy season are known only to the Arabs. On leaving the Lake of Tiberias it flows for about three hours near the western hills, and then turns towards the eastern, on which side it continues its course for several hours.

Dr. Richardson states that three streams issue from the lake, which soon unite to re-form the Jordan. This was in May; and the circumstance is not noticed by other travellers, who



[The Jordan leaving the Lake.]

describe the issuing river as a single stream. The Jordan rushes from the lake with considerable force in a stream which is about fourteen yards across at the end of April. There are some remains of a bridge, a little below, but the stream is now crossed at this point in a crazy ferry-boat. It will be recollected that there were ferry-boats on the river in the reign of David.<sup>a</sup> We find no notice of its being in use later than April: so it seems probable that the river cannot here be forded in winter and early spring, when, of course, the river must even there have its volume of water greatly increased by the rise of the waters in the lake.

In May (15th) we find it said that at this place the stream "is now forded by the Arabs, who swim their animals across."<sup>b</sup> The Rev. P. Fisk, who was here in November (11th), and rode a little way down the bank, says,—“The river bends often, and varies much in width, perhaps, from 30 to 100 yards. It is so shallow, that cattle and asses were fording it without difficulty.” Mr. Buckingham states the stream to have been “barely fordable” at two or three miles below the lake, in the beginning of February, and that it had then and there a current of about two knots an hour.

The river appears to diminish its speed as it proceeds. One of the fords, practicable even in February, occurs about four miles below the lake. There, however, the water is so deep near the banks as to throw the horses off their legs and oblige them to swim: but they regain their footing as they approach the middle of the stream; and in the very centre it is found to be quite shallow.

<sup>a</sup> “There went over a ferry-boat to carry over the king's household, and to do what he thought good,” 2 Sam. xix. 15.

<sup>b</sup> Maddox, ii. 251.

About ten miles below the lake, there is a large stone bridge of one large and two small arches. The river has here a considerable depth of water, and is about forty feet wide. The water is of a white sulphureous colour, but without any unpleasant smell or taste, and it rolls over a very stony bed. A little above the bridge the stream is smoother and the bottom more practicable than in its immediate neighbourhood.

About ten miles below this bridge, and twenty below the lake, we come opposite the town of Bysan,<sup>a</sup> which stands about two miles from the river to the west. In this neighbourhood there are two or three fords over the Jordan. Indeed the river is here so generally fordable, that, in ancient times, as now, it was much crossed in this direction. It is, however, not usually forded opposite the town, but about three miles lower down. Here it was crossed by Captain Mangles, who observes (March 12) that the stream is much more swift here than it is nearer to the Lake of Tiberias. The depth at the ford reached above the bellies of the horses; and the *measured* breadth was found to be 145 feet. Burckhardt, who crossed above two miles lower down in the midst of summer, found the river eighty paces broad and about three feet deep.<sup>b</sup>

We proceed southward from this point for as much as twenty-seven miles (direct distance), without finding any point where the river has been visited or crossed by any modern travellers; and this important central tract, with the country on either hand, may be pointed out to future travellers as a part of Palestine absolutely unvisited, and therefore undescribed, although it is a portion of the country in which some valuable discoveries relating to ancient sites might very probably be made.

We become acquainted with the Jordan again at a point about twenty miles to the north of the Dead Sea. It was here crossed by Captains Irby and Mangles at the latter end of March.<sup>c</sup> Approaching the river from the east, they observe, "The plain, from the foot of the mountains, is about half way pretty level, but barren; thence it becomes rugged, consisting of a quantity of hills, vales, and deep chasms, in a dry soil of very white appearance, and of a saltish nature: this continues to within a quarter of a mile of the river's bank; whence the rest is a rich flat plain to the margin of the river, which is in the bottom of a deep ravine, beautifully wooded, and so overgrown, that the stream is not seen till you are close to it." They found the river quite swollen, and it was not without much delay and difficulty, and some danger, that they were able to cross, and then only by swimming their horses.

Another place of passage, about four miles below this, has been fully described by Mr. Buckingham. The great vale of Jordan is here about ten miles across, from the eastern to the western mountains, while the lower valley in which the Jordan runs, is, as far as observed from this point, about a mile wide in its widest parts and a furlong in the narrowest. Descending into this, the white chalky cliffs on either side appear to be about 200 feet high. The river flows through the midst of the lower vale, between banks which are fourteen or fifteen feet high; but this is when the stream (January) was at its lowest ebb; for there are indications that, when swollen by rains, it may overflow its banks sufficiently to inundate the lower plain, though it could never reach the upper one. The stream appeared, at this place and at this season, to be little more than twenty-five yards in breadth, and so shallow as to be easily forded by horses. The banks are thickly lined with tall rushes, oleanders, and a few willows. The stream is extremely rapid; the waters tolerably clear, from its flowing over a bed of pebbles, and is pure and sweet to the taste. Mr. Buckingham inquires whether the Israelites did not cross the river at this point, but we think it must have been lower down.

The place where Christ received baptism from the hands of John the Baptist is that which has for ages engaged the interest of the Catholic and Oriental Christians; and which has been far more frequented than any other part of the river. Indeed the spot has, from the most remote times until now, been a place of annual pilgrimage, at Easter, to thousands of Christians from all parts of the world.<sup>d</sup> The true site of this interesting event is, however, probably

<sup>a</sup> The Scriptural 'Bethshan,' and the classical 'Scythopolis.' To the walls of this town the Philistines fastened the Saul. 1 Sam. xxxi. 10.

<sup>b</sup> Richardson, ii. 425; Irby and Mangles, 304; Burckhardt, 345.

<sup>c</sup> Irby and Mangles, 326; Buckingham's 'Palestine,' i. 90-93.

<sup>d</sup> See the cut at the head of this chapter.

not known. The Catholics disagree with the Greek and Oriental Christians on this point. The latter place the site three or four miles further towards the Dead Sea than the former; and this is so far happy, as it prevents interference in their pilgrimages to and their ablutions in the sacred stream. The Catholics place the site about seven miles from the Dead Sea, the Greeks not more than four. Some confusion arises from the indistinct manner in which travellers speak of the place of pilgrimage, without stating which of the two places they mean. But this may be sometimes collected from circumstances. The old travellers invariably speak of the place which the Catholics have chosen; while those of more recent date more commonly have in view the point, lower down, which the Orientals prefer to consider as "the place where John was baptising." To both parties, the places to which they respectively repair, is of additional interest to them, from the belief that the place where Christ was baptized was that also where the Israelites crossed the river. And this is not unlikely; for John is said to have been baptizing at "Beth-abara beyond Jordan," and *Beth-abara* means "the house of passage," with a very possible reference to the passage of the Israelites at that place.

Both points are two of the most beautiful places on the river; and as there seems little difference in the appearance of the stream or its banks, we shall be content to notice that which is nearest the Asphaltic Lake, and which has been the most frequently visited and described. But it may enliven these details if we join the annual pilgrimage in its visit to this spot, taking that of 1837, which has been so well described by the Rev. C. B. Elliot.

The cavalcade consisted of about 3000 Greek and Oriental pilgrims from every part of the world where the eastern churches have members, together with muleteers, camel-drivers, Turkish and Arab soldiers, and half-a-dozen Frank travellers, who swelled the amount to 5000.

"On these occasions every beast in Judea is put in requisition; and horses, donkeys, mules, ponies, and camels, flocking from all quarters, throng Jerusalem for several days previous. The young and the aged are placed in panniers on either side of a camel: women who never before mounted a horse now cross themselves in an orthodox manner (for their safety depends on the exact mode of forming the cross!), and stride *manfully* the saddle: boys and girls are seen siding two and two, beguiling the length of the journey with an occasional dispute as to which shall sit on the pad, and which on the less comfortable back-bone of the beast, sharpened by a perpetual fast. Hundreds who cannot afford to ride, having already bestowed on the priests the earnings of many years, trudge on foot; at first briskly leading the way, then merged in the equestrian cavalcade, till at length they are worn out with fatigue, and their pilgrim staves bring up the rear. A singular variety of costume characterises the barbarous Russian, the sportive Athenian, the patriotic islander, the Greek priest, the austere Armenian, the poor Copt, and the dark-skinned Syrian; while all these blend picturesquely with the uniform of the Turkish and Arab cavalry, who gallop their well-trained horses up and down among the motley crowd, now urging them to full speed, and now suddenly curbing them with a rapidity that excites as much alarm as admiration."

We cannot afford to follow Mr. Elliot through all the details of the journey; although they are well worth perusal, as forming, altogether, the best description we possess of this pilgrimage. The caravan usually arrives towards evening in the neighbourhood of Rihha (the supposed) Jericho, and encamps near the stream which flows by, issuing from a spring, supposed to be the same which the prophet Elisha healed:—

"A little after midnight the pilgrims put themselves in motion, in order to reach by sunrise the banks of the sacred river; but it is no easy matter to start a caravan of 5000 persons, and it was three o'clock, A.M., before the cavalcade was in progress. A number of torch-bearers preceded, carrying flambeaux, which threw a wild blaze of light over the plain and the moving host. The Arab cavalry marched next, their spirited horses curveting, while they plunged into the high grass and jungle, to drive out any lurking Bedouins; the governor, with the Greek archbishop, followed; and lastly the whole host of pilgrims, hurrying along with anxious expectation to wash in a stream which they vainly suppose to be endowed with a cleansing moral efficacy. In such a multitude, moving without order, subject to no discipline, and

wrought up to an unnatural pitch of excitement by superstitious zeal, it is not surprising that many accidents occur. Some of the party are generally left dead, many are wounded, and all are kept in a state of feverish alarm for their personal safety. One thing struck us forcibly, —the entire absence of sympathy among these professors of piety. If an aged man, a feeble woman, or helpless child fell from his seat, no friendly hand was stretched out to aid, and no fellow-pilgrim halted to ascertain the extent of injury received. The groans and cries of the sufferer were responded to by a laugh, and the cavalcade moved on regardless of their brother, who, if he met with sympathy and aid, found it at the hand of some 'good Samaritan,' united to him by no ties of country or of faith.

"The sun arose above the mountains of Moab just as we reached the Jordan, after a ride of more than two hours over a tract utterly steril, deserted even by the samphire and low shrubs which appear on other parts of the plain. Instantly a rush was made, and the pilgrims, young and old, rich and poor, sick and sound, men, women, and children, plunged into the stream. Some of the females and children, however, evinced a degree of nervousness, and here and there the father of a family might be seen gently chiding his spouse, or more roughly handling his young ones; now religiously forcing the head of a little girl under the water, and now struggling with a well-grown urchin, whose fears had got the better of his love of pilgrimage. Of the men, some jumped boldly in, communicating a rotatory motion to the body as it passed through the air; a few considerably occupied themselves in aiding the weaker sex, rendering to a tottering mother or timid sister the support of filial or fraternal strength; others resigned themselves composedly to the priests, who, standing like the Baptist in the river, poured the sacred water three times on the head of the devotee. All were clad in their winding-sheets, or, to speak more correctly, all carried with them, either attached in some way to the body, or held loosely in the hand, the piece of cloth with which they wished to be enveloped after death, for to make certainty more sure, the *hajee*, who has preserved the taper once touched by the holy fire,<sup>a</sup> secures likewise a winding-sheet dipped in Jordan, which possesses an equal charm, and is supposed to protect from the power of the devil both the corpse so shrouded, and the spirit that shall reanimate it. Some of these promiscuous bathings are occasions of great indecorum, but, in the present instance, we saw no more than the *ghât* of every populous town on the Ganges exhibits daily. When, however, the scene is contemplated as a religious ceremony, and when the Turkish governor is observed, with his Moslem satellites, ridiculing with proud disdain these vain ablutions, and this violation of female modesty, the Protestant cannot but lament the errors of those who, like himself, profess the faith of Christ, and the consequent degradation of that sacred name in the eyes of infidels."<sup>b</sup>

The bed or valley of the river, as distinguished from the plain, exhibits in this quarter a series of terraced depressions from the plains of Jericho to the stream. The first occurs about a mile and a half from the Jordan, where a descent of about eight feet is made. This descent is rather irregular, the edges of the strata much washed, and there are many irregular masses of earth along the edge, that have resisted the wastings which removed the strata to this extent. The whole surface of this part of the plain is very destitute of vegetation. At the distance of about three quarters of a mile there is another depression, nearly as considerable as the former, the edge of which has much the same washed and irregular appearance. The land, or vale, which is now entered, has many of those irregular mounds of earth which have been mentioned as lying along the water's edge of the former descent. A recent American traveller,<sup>c</sup> who has given the best, or, indeed, the only description of these appearances, says:—"It looked as if the whole plain had once been on a level with the part above the first descent, and that a sweeping torrent, extending out to where the first bank is, had passed over it, and swept away about ten feet of earth, except a few hard spots near the edge; then, that another

<sup>a</sup> This alludes to the shocking imposition practised by the priests upon the people on Easter-day, in the church of the Holy Sepulchre, whereby they are made to believe that a light, kindled by some artificial means within the Sepulchre, and produced to their admiration and reverence, has been the result of a miracle.

<sup>b</sup> Elliot, i. 74—77

<sup>c</sup> The Rev. J. D. Paxton, whose very instructive little volume of 'Letters on Palestine,' has been re-published in this country.

torrent had come down, reaching out only to the place where the second bank is, and within its range had carried off ten or twelve feet of earth, leaving a large number of spots that resisted its force; for the mounds between the first and second banks nearly agreed in height with the plain above that bank, while those below the second bank agreed in height with the land between the first and second banks." From this traveller's further account it appears, that in the space between the second and third banks, much of the ground looked as if it was often covered with water, like the dried mud on which water has long lain, thus evincing that the Jordan sometimes overflows its proper channel to this extent. This is not the general character of the district. There are in many places small bushes, and in some parts a considerable crop of weeds. There is a third descent to what may be considered the immediate bank of the stream in its ordinary channel. It is about the same depth as the former; and on and near this last bank, down to the water's edge, there are numerous bushes and small trees of the kinds already noticed.

The terraced appearances here described are very common where rivers, subject to periodical overflows, traverse a plain, the soil of which may be easily disintegrated or undermined by the action of water. It certainly seems to us to prove that the Jordan, in its annual overflows, once reached to the upper water-mark. That it does not do so at this time may be owing to the stream (which is here very rapid) having worn itself a deeper channel than of old. These different banks, so distinctly marked, are probably of old origin, and if they existed when the Israelites crossed the river, we obtain a clearer and more intense meaning from the explanation that "the Jordan overfloweth *all its banks* at the time of harvest."<sup>a</sup>

It is singular that no travellers have visited the river at the time when they might fairly expect to see it in its most enlarged condition. This is owing to their visits having been generally paid in company with the pilgrim caravan, for the sake of the protection thus obtained. Maundrell, and others after him, are wrong in expecting that if the river were at all much enlarged in our day, *that* would be the time of the year to find it overflowed. In the cases of rivers, the overflow of which is caused by the melting of the snows in or near which they have their source, we have always found the season more advanced before this effect takes place, as is indeed obvious from the increased warmth which is required to dissolve the immense quantities of snow which have been deposited upon the mountains. We should expect, therefore, to find the river-flood rather in May than in March or the early part of April. This is the case with the Euphrates, Tigris, and other rivers liable to increase from the same cause; and this, by-the-by, incidentally corroborates the statement in a preceding page, that April, rather than March, was *anciently* the initial month of the Hebrew year, for, according to that, the "tenth day of the first month" (or say, of the first moon *after* the vernal equinox) brings the time of overflow forward, in accordance with the statement we have just made; and in reference to this statement we have the satisfaction to find Lord Lindsay say, that *in June* "the upper bed of the river was still moist from the floods." By the "upper bed" we presume he intends to indicate that which Paxton describes as being covered with alluvial sediment. Now that travellers are beginning to visit the river at different times of the year, we may soon hope for more positive information on the subject.<sup>b</sup>

Several streams in Palestine, which are absolutely dry in summer, become large and powerful streams in the season of flood, and there is not the least reason to question that there is still—since the physical causes still endure—a corresponding increase in the stream of the Jordan during the same season. The difference in the appearance of rivers liable to this periodical increase, when overflowed, and when in its ordinary state, cannot perhaps be better illustrated than by reference to the vast difference in the appearance of many of our own rivers, near their estuaries, when the tide is at ebb and when at flow.

The breadth and depth of the Jordan, in its ordinary condition, at the place where we have so long detained the reader, are not very considerable. But both the breadth and depth or

<sup>a</sup> Josh. iii. 15.

<sup>b</sup> Since this was written, we have found the conclusion we have hazarded confirmed in Dr. Robinson's account of his recent journey. He was at the Jordan in the middle of May—the time of wheat harvest in the valley of the Jordan—and found it there overflowing the banks of its ordinary channel.

this river varies so greatly in different parts of its course, that no general inference is to be deduced from that circumstance. Indeed, this spot is, properly speaking, one of the fords of the river, and therefore more practicable, both as to breadth and depth than other points, above and below. As to the breadth here, accounts vary between twenty and thirty yards, and an average may therefore be struck at twenty-five. The depth is not so well ascertained. Shaw says, three yards *at the brink*; but it does not appear at what point he made this observation. Maundrell, who certainly was at the Catholic place of ablution, says, that its depth was there greater than his height. Mr. Paxton, who was at the lower point in the month of October, thought it might then have been forded but for the rapidity of the current; and Mr. Arundale, who was there in the same month, actually represents it as being forded, in the drawing (furnished by him) at the head of this chapter. Mr. Paxton, notwithstanding the strong current, swam across the river and back again in safety; and in the same month of October, the Marquis of Waterford performed the same feat "without difficulty." We suspect, however, that this could not be done at the time of pilgrimage in early spring, when the stream appears to be fuller, and the current stronger than in the fall of the year. At all events, the current is then so strong, that, according to all accounts, many of the pilgrims are swept away by it; and although most of them save themselves, by getting hold of the willows or bushes that overhang the stream, a year seldom passes in which some of them are not drowned.<sup>a</sup>

The water has here, and for the remainder of its course, a muddy, or, as some describe it, a sulphurous white appearance, derived, it would seem, from its having passed through beds of sandy clay. It is, however, very wholesome, always cool, and nearly tasteless. Although passing through some saline tracts, it does not contain more than one three-hundredth of its weight of salts; but these are of *the same kinds* which are found more abundantly in the waters of the Dead Sea.

Such travellers as have proceeded from this point to the head of the Dead Sea, have generally journeyed at some distance west from the river. Mr. Stephens, however, tracked it down to the lake, following all its flexures. He states that below the place of pilgrimage, there is no point on the river that offers any natural attractions to the traveller. The stream contracts to about thirty paces wide a little below the place of bathing, but again widens as it approaches its termination. Speaking generally of this portion of the river, Mr. Stephens says, "It is a small, broken, and muddy stream, running between banks of barren sand, without beauty or verdure; and if it were not for the associations connected with it, a man would turn from it as the most uninteresting of rivers." This, it will be remarked, is the observation of an American, accustomed to magnificent rivers:—but we will not repeat what has been said on this point, in a preceding page. This traveller in one place saw some Arabs wading across; and yet the river, as far as he could judge, had not fallen more than two feet.—"For the last two or three miles it runs between perpendicular banks of sand, from five to ten feet high, and its pure waters are already contaminated by the pestiferous influence of the bituminous lake. On the left it stops even with the shore; but on the right the bank runs out to a low, sandy point, round which a quantity of drift wood is collected; and here, with a gentle ripple of its waters, the Jordan enters the Dead Sea." If this account is different from others, it is doubtless because of the difference, at different times of the year, to which we have already adverted. Thus Mr. Jolliffe describes the stream as being, at its embouchure, deep and rapid, rolling a considerable volume of waters into the Dead Sea. Its width appeared to him to be from 200 to 300 feet.<sup>b</sup> The current was so violent that a Greek servant who attempted to cross it, though strong, active, and an expert swimmer, found it impracticable. This was the

<sup>a</sup> "While I was looking on, two men, a Russian and a Greek, were overpowered by the torrent, and as neither of them could swim, they clung to each other, and were soon under water. The Russian was entangled among the roots of trees, and rose to the surface; but though he seized some overhanging branches, with the grasp of a perishing man, the current was too strong, and he was again carried away by the stream. He was, however, saved at some distance lower down, but the Greek was never seen after he first sunk. I was told that a Turk was also drowned at the same place, but I did not witness the circumstance. It excited little attention among the people, and they continued to enter the water with the same fearlessness as before."—Hardy's 'Notices of the Holy Land.'

<sup>b</sup> Mr. Robinson says about fifty yards.



more to be regretted as he was to have taken across one end of a measuring line, whereby the actual breadth might have been ascertained. It appears that the river does not extend its current into the Dead Sea, as some of the older writers allege; but is stopped at once by the denser waters of the lake.

Having examined the river Jordan thus in detail, there is little need of other collective observations, than the above account has comprehended. It may be well, however, that the reader should remember that the described points are for the most part fords; and where, therefore, from the very nature of the distinction, the river is more shallow than in other places. Several attempts have been made to estimate the average breadth and depth of the Jordan between the two lakes. Dr. Shaw took its average breadth at thirty yards, and its depth at nine feet, and assumed its speed to be two miles an hour; on which data he calculated that the river discharged into the Dead Sea daily, 6,090,000 tons of water. Volney makes the breadth from sixty to eighty feet, and the depth ten or twelve feet. Mariti reckons the average breadth, at ordinary times, as sixty feet, and the breadth from seven to nine feet; and he affirms that at the seasons of its overflow, the inundation extends for four miles, and that sometimes the inequality of the soil then parts it into two different beds. Legh compares the river to the Thames below Oxford, but describes it as more rapid. Elliot reckons that between the two lakes the breadth of the stream varies from thirty to sixty yards, and its depth from six to sixteen. If we collate these statements with the observations (already recorded) of other travellers made at various points, we shall see reason to conclude that the true average breadth may be about thirty yards, and the depth eight or nine feet.

We have already had occasion to remark how singularly low the valley through which this river flows lies, as compared with the central part of Canaan, and with the country beyond Jordan. Some notion of this may be formed from the fact that according to Mr. Russegger, the bathing-place of the pilgrims is not less than 1269 feet below the level of the Mediterranean, while at the head of the Dead Sea, the depression reaches to 1319 French feet, or nearly 1400 English feet, below the same level. This depression occasions, along the borders of the river, a marked distinction of climate, which we shall find another occasion to describe.

Although the water is always turbid in the latter part of the river's course, it is said that when taken from the stream and left in a vessel, it soon clears itself, and deposits a black



[The Dead Sea.]

sediment, containing bituminous particles. Nevertheless it is soft, incorruptible, and abounds in fish. In all times pilgrims have been accustomed to take home with them, not only willow-staves cut from the banks of the Jordan, and pebbles from its bed, but also bottles of the water, to which, by reason of its alleged sanctity, peculiar virtues of healing to the body and the soul were ascribed. Vases of Jordan water were received as valuable presents by the princes of Christendom, who made use of it in the baptism of their children, it being deemed far more efficacious than any other water in cleansing from the taint of original sin.<sup>a</sup>

Having now attended the Jordan to the Dead Sea, that singular body of water next requires our attention.

The awful catastrophe whereby the fruitful plain of Siddim underwent that change by which this lake is usually supposed to have been formed, has already been noticed in the historical portion of this work, and need not detain us in this place.

This lake is known by various names in the Scriptures, as *the Sea of the Plain*,<sup>b</sup> from its situation in the great hollow or plain of the Jordan, or, perhaps, from its covering the ancient and beautiful plain of Siddim—*The Salt Sea*,<sup>c</sup> from the extreme saltness of its waters; and *the East Sea*,<sup>d</sup> from its situation with respect to the east of Judea, and in contradistinction to the West Sea, or the Mediterranean. By Josephus and the classical writers in general, it is also called *Lacus Asphaltites*, from the quantities of asphaltum which are found in it and on its borders. *Mare Mortuum*, or *the Dead Sea*, was another of its names, and that by which it is now generally known in Europe. But the natives now call it *Bahr Lout*, the Sea of Lot, or *Bahr Mutneh*, the Stinking Sea.

This very remarkable body of water was as much an object of curiosity and wonder in ancient as it has been in modern times. But the ancient genius, being essentially exaggerative, it became invested with many circumstances of horror and wonder which do not properly belong to it, and from which it has hardly been yet cleared.

As the lake has not yet been fully explored and surveyed, as there is much reason to hope it will soon be, it may be still said that there is no authority for the description of it equal to that of Josephus, whose account necessarily embodies the information possessed by those who had for ages been inhabitants of the country, and by whom it must have been intimately known in every part. We shall, therefore, as the most eligible course, give his account, and then offer our observations in the same order in which his details are given, to illustrate or explain the several particulars.

The length of the lake he states as 580 stades, and its breadth 150. This is rendered by his translators and interpreters into 72 miles long by 18 broad, it being very convenient to consider the stade as equivalent to the furlong, of which eight make one mile. In fact, the word *stade* is usually rendered by *furlong* in most old translations and descriptions from ancient sources. But it is forgotten that while of the Roman stades there were indeed 600 to the degree, there was the older and shorter Greek stade of 700 to the degree, that is of about ten to the mile. Now we have satisfied ourselves, by comparing the measurements of Josephus between known points, that he employs this shorter measure; and that, therefore, he intends to describe the Asphaltic Lake as not more than 56 miles long by 15 broad.

The shores he describes as unfruitful; the waters were very bitter, and so dense of body, that they bore up the heaviest things that were thrown into it; nor would it be easy for any one to sink therein even if he wished. Accordingly, when Vespasian visited the lake, he made experiment of this, by causing some men who could not swim to have their hands tied behind them and to be cast into the lake, when it was seen that they were buoyed up by the water even as light bodies are impelled upward by the wind.

The colour of the water was observed to change in a very remarkable manner. It altered its appearance regularly three times every day, according to the difference in the direction in

<sup>a</sup> Lindsay, ii. 65; Paxton, 158; Arundale, 80; Stephens, ii. 361—363; Jolliffe, 115; Robinson, 70; Elliot, ii. 477; Shaw, ii. 156; Mariti, ii. 326, 327; Nau, 272.

<sup>b</sup> Deut. li. 17, iv. 19.

<sup>c</sup> Deut. iii. 17; Josh. xv. 5.

<sup>d</sup> Ezek. xlvi. 18; Joel ii. 20.

which the rays of the sun shone upon and were reflected from it. But this, we may observe, is very natural, and occurs more or less in every lake hemmed in by high mountains.

It appears that then, as now, masses of black bitumen, of which we have spoken in another place <sup>a</sup> were thrown up to the surface. Josephus compares these masses, quaintly enough, to headless bulls, both in shape and size; adding, that men went out in boats to collect it, which was a work of some labour, from the tenacity of the mass, which rendered it difficult to proportion the quantity taken on board to the burden of the vessel. It was used for caulking ships, and in embalmings, as well as for various medicinal purposes.

Josephus speaks of *the land of Sodom*, the desolation of which has been recorded elsewhere, not as the land now covered by the lake, but as the land which still bordered on this lake. This, he says, was once a happy and blessed country; but, for the iniquities of its people, was burnt up and consumed by the fires of heaven. Of this Divine judgment the land still offered abundant traces. Even some remains of the ruined cities might still be perceived. The fruits which grew there were also appropriate monuments of its condition; for while to the eye they seemed pleasant and good for food, they were crushed in the hand that plucked them, and offered nothing but dust and ashes.

From other Jewish sources we get little further information. We only learn that its bitumen was one of the ingredients in the holy incense, perhaps to render it inflammable; and that it was usual among the later Jews to devote to 'the Salt Sea,' anything destined to rejection and cursing, and that might by no means be used.

It is surprising how little has been added, until very recently, to the account which Josephus gives. The older travellers seldom saw anything but what they went purposely to see, or did anything but what they had purposed to do. The journey to that quarter has always, from the time of Christ till now, been dangerous from being infested by robbers and Bedouins. And it was so great a thing to visit the Jordan, and in its stream to leave the taint of original sin, and to secure the soul and body from the power of hell, that few of the pilgrims concerned themselves about so comparatively trifling and foreign a matter as a visit to the Dead Sea. The best information is that supplied by the monks and missionaries, whose long residence in the country afforded them many opportunities of obtaining information which could not be equally open to the pilgrim or passing traveller. And, upon the whole, as far as substantial facts are concerned, it is probable that very nearly as much information concerning this sea existed in books a hundred and sixty years ago as at the present time, notwithstanding the seeming discoveries which have been made in that quarter within the last thirty years. The accounts of the old travellers do not differ from one another more than those of the modern—and the differences in both cases may be referred to the same causes—the different times of the year in which the visits were made, and the difference of temperament in the visitors, and the greater or less manifestation in them of those imaginative faculties which give their own hue to the objects they regard.

With respect to the dimensions of the lake the old travellers differ less among themselves perhaps than those of later date. The average of their accounts would make it about forty-five miles in length by ten in breadth, which differs little from the measurement we have interpreted Josephus to give, and agrees as nearly as may be with the dimensions given to it in the map lately published by the Geographical Society.<sup>b</sup>

Antoninus Martyr merely speaks of the bitumen and sulphur of the lake, and the absence of any living thing on its waters, or of trees or verdure on its shores. But he adds that in July and August it was usual in his time for lepers to resort to the lake, and bathing in its waters, it sometimes pleased God that they were healed.

Brocard confirms the account of its steril shores. A hideous vapour, he says, rises from the lake, so that the smoke and darkness by which it was invested made it no inapt type of hell. This vapour is so deleterious that the barbarians inhabiting the neighbourhood took care to fix themselves beyond the point to which it continues to be injurious, when driven before the wind.

<sup>a</sup> Physical History, p. lxxx.

<sup>b</sup> In vol. xi. pt. 2, of its 'Journal.'

Other old writers describe the water as an abominable infusion of nitre and sulphur, so offensive and nauseous to the smell and taste, that the salt of the lake was never applied to any use. Arculf<sup>a</sup> notices the saline deposit on the borders of the lake, caused by the absorption, by heat, of the water thrown high up the shore by tempests, or that is left when the lake has sunk to its usual level after the periodical overflow.

Anselm contradicts much that previous writers had stated. He had bathed his feet in the lake, and had seen naked Arabs and Greeks bathing their whole persons, without being at all annoyed by the fetor or the pestilential vapours, of which so much had been said. And as to the sterility of the borders, he declares there was no part of the Holy Land in which he saw better pasturage; the absence of trees he seems to allow by his silence.

Some of the middle age writers attribute the absence of boats upon the lake to the injurious effects of the vapour, so that men could not endure it, and that it is therefore, in effect, not navigable. But this is contradicted by the account already copied from Josephus; and Scheriff ibn Idris<sup>b</sup> bears witness that there were some few vessels on the lake in his time. A more recent contradiction will presently be adduced.

We know no early writer who pretends, as often stated in later times, that the vapours of this lake are so fatal to birds, that they cannot pass over it or remain on its borders. Eugene Roger, who saw that the vapour, of which so much had been said, was not a spontaneous exhalation from the lake, but was an absorption of moisture from the lake by the heat of the procumbent air, alleges that it was so sulphurous that *insects* could not endure it. And this may be true while the process of absorption is going on with great activity; for we have evidence that great numbers of *locusts* have been seen lying dead on the borders of the lake.

The same writer affirms that the salt of the Dead Sea *was* in use for culinary purposes in Jerusalem: and this is confirmed by Irby and Mangles, who saw people collecting the salt towards the southern extremity of the lake; and by Madden, who met people who were bound from Jerusalem to the western border of the lake, to collect salt there.

That no fish will live in the lake, and that, although fish abound in the lake of Gennesareth and the river Jordan, those that make their way to the Asphaltic Lake soon die, is confirmed by Jerome, many years of whose valuable life were spent in the neighbourhood. He makes this remark in a note on Ezek. xlvii. 9, 10. Indeed, that chapter of the prophet, by describing what the lake should offer when its waters became wholesome, clearly intimates what it had not in its present unwholesome state. In this obvious view, the passage is so interesting that we will transcribe it below.<sup>c</sup> That fish coming from the wholesome waters of the lake of Tiberias and the Jordan should perish in the briny and bitter waters of the Dead Sea is natural. That the lake should have no fish of its own is not of itself so evident, but is so probable, and supported by such a concurrent weight of testimony, that we have no doubt on the subject. That *shells* have been found on the shore proves nothing as to shell-fish. They or their shells might be brought down by the river and deposited on the shore; besides, that shells of some kind or other are found in almost all parts of the land.

It is not difficult to account for the assertion of Josephus that traces of the guilty cities of the plain might still be perceived. It is clear that the Jewish historian did not consider that the cities were submerged in the lake, but lay upon its borders. There is nothing in his more formal account of the lake, or in his historical notice of the destruction of Sodom to

<sup>a</sup> In Adamnanus, de Locis Terræ Sanctæ, l. ii. cap. 14.

<sup>b</sup> Cited in Reland, Palæstina, lib. i. cap. 38.

<sup>c</sup> "These waters issue out towards the east country, and go down into the desert, and go into the sea; which being brought forth into the sea, the waters shall be healed. And it shall come to pass that everything that liveth, which moveth, whithersoever the rivers shall come, shall live; and there shall be a very great multitude of fish, because these waters shall come thither; for they shall be healed; and everything shall live whither the river cometh. And it shall come to pass that fishers shall stand upon it from Engedi even unto En-glain; they shall be a place to spread forth nets, their fish shall be according to their kind, even as the fish of the great sea [Mediterranean], exceeding many. But the miry places thereof, and the marishes thereof shall not be healed, they shall be given to salt. And by the river upon the bank thereof, on this side and on that side, shall grow all trees for meat, whose leaf shall not fade, neither shall the fruit thereof be consumed."—Ezek. xlvii. 8—12. In this very interesting passage we see it clearly intimated that no fish could live in the lake; that no useful trees grew on its banks, and from the context it may not be difficult to collect that there were such unprofitable fruits as the famous "apples of Sodom," which will require our attention in another place. We also observe that the natural salt pans to the S.E. of the lake were so useful from the supply of salt which they afforded the inhabitants of the country, that they were on that account exempted from the curative processes metaphorically applied to the lake itself.

suggest that he supposed the lake was at that time first formed. He rather states that it previously existed, but that its nature, and that of its shores, was so changed as to be no longer beautiful and rich, as of old. In short, he manifestly conceives that Sodom and the other cities stood upon the borders of the lake, in like manner as Tiberias, Capernaum, Charazin, Bethsaida, and other towns, stood upon the lake of Gennesareth; and, were this the case, it is certainly not impossible that in such a climate, and in a quarter so unfrequented, some traces of the doomed cities might be preserved, especially as the saline incrustations of the lake might tend to their preservation. But it is more likely that the ruins of towns of far later origin might be taken for those of Sodom, Gomorrah, Admah, and Zeboim. It is precisely in this sense that Varthema<sup>a</sup> understood Josephus, and declares himself to have seen the same ruins:—"We came to the playne or valley of Sodoma and Gomorrha, where we found it to be true that is written in Holy Scripture; for there yet remayne the ruynes of the destroyed citie as witness of God's wrath. We may affyrme that there are three cities, and eche of them scituate on the declyning of three hylles: and the ruynes do appeare about the heght of three or foure cubites. There is yet seen neare, I wotte, what is lyke blood, or lyke redde waxe myxt with earth." Although this writer is not the most credible of travellers, it is very likely he saw such ruins as he mentions, but that they were the ruins of "the cities of the plain" is quite another question. Since then, however, travellers, misunderstanding the position taken by Josephus, have been seeking the ruins *under the water*; and, as the water is very clear, while the bottom doubtless contains rocks, stones, and other protuberant masses, it would be strange if, with tolerably active imaginations, they had not found what they sought. Indeed they have thrown new light on the architecture of the patriarchal ages, as they have not only seen masses of stone buildings, but rows of columns "with goodly chapiters adorned." Others have only *heard* from their native guides that, when the lake is very low, ruins of towns are seen at the bottom. It is possible that some travellers have stated, as the result of their own observation, what they thus heard from their guides. Mr. Elliot, on receiving this information from his guide, the sheikh of Bethlehem, observes,— "While holding our opinion in abeyance on this point we must remember we have no parallel instance from which to deduce a positive conclusion, that under water so impregnated, masonry could not endure for four thousand years." Yes, "*masonry*;" but a moment's thought will suggest a doubt whether the buildings of the patriarchal age in Syria were anything more than dried mud and timber. At the present day the inhabitants of Syria build with these materials, even though quarries are at their doors, from the expense of working them, and the want of means of conveying stone even to a short distance. It does not seem at all likely that the people of the country were in the patriarchal age in a better condition in this respect than the present inhabitants. Besides, Job, who lived in that age, and on the borders of the same country, describes men as then building "houses of clay," not of stone; and if the houses of the very ancient inhabitants were of clay, and such as the present inhabitants build (and they were not likely to have been better), we know that moisture is that which they are least able to stand, and that an unusually wet season does immense damage to them, and ruins many of them; and that it would be impossible for any mass of building to remain three days in water without falling to pieces, and being resolved into a muddy sediment. Indeed the liability of such houses as existed in his time of being swept away and destroyed by water is plainly intimated by Job.<sup>b</sup> But Josephus was not guilty of the absurdity of supposing that the ruins of Sodom might still be found *under* the water.

All the old travellers were uncommonly perplexed to account for the fact that, although the Dead Sea was constantly receiving large supplies of water from the Jordan and other rivers, and had no visible outlet by which they might be again discharged, its waters were generally at the same level. At last it was concluded that the redundant waters passed off to

<sup>a</sup> "The Navigations and Voyages of Lewes Vertomanus [Varthema, sometimes Barthema], gentelman of the cite of Rome, to the regions of Arabia, Egypte, Persia, Syria, Ethiopia, and East India, both within and without the ryuer of Ganges, &c., in the yeere of our Lorde, 1503. Conteyning many notable and straunge things, both hystorical and naturall. Translated out of Latin into Englyshe, by Richard Eden, in the yeere of our Lorde, 1576.

<sup>b</sup> Job iv. 19, xxii. 16.

the Mediterranean or the Euxine Gulf by some subterraneous communication. As the Mediterranean was nearest, the communication was most generally supposed to be with that sea, especially after a story gained currency, that a wooden bowl, which a pilgrim had let fall into the Asphaltic Lake, had been picked up on the shores of Sicily. Others, justly questioning this ground, were driven to the alternative of supposing that a quantity of water equal to that which the lake received, was absorbed by the burning sands on its borders. But this question has now long been set at rest. It is known that in the case of this and many other inland lakes which have no visible outlet, the air imbibes from the surface as much water as the rivers give to it, thus keeping it at the same level, except at the season when the rivers, from rains and melted snows, pour in more than the usual supply, for then the lake rises above its usual level. We know not that it has been seen in this state, but the fact is demonstrated by the drift-wood and other matters which lie at what may be called the high-water mark, which mark is in some places more than a mile from the ordinary edge of the water. Dr. Halley showed that the absorption of water from the surface of the Mediterranean was equal to 6914 tuns daily for every square mile. Now the absorption is the most active where the heat of the air is most intense; and as there is, perhaps, hardly any place without the tropics where the heat is greater than in the basin of the Dead Sea and the valley of the Jordan, a still more active evaporation than this must be allowed, and will be found fully adequate to consume all the water which the lake receives, even if as much as Dr. Shaw has calculated. In a basin so confined, and in which the air becomes so intensely heated, and where, moreover, the water is of such peculiar qualities, the process of evaporation, or the incumbent vapour, may be expected to be oftener visible than under other circumstances. Hence the accounts of the mists, the vapours, the smoke, the darkness covering the lake, and which the older travellers supposed to be spontaneous emissions from it, and which, we believe, Morison was the first to perceive to be no other than the vapour drawn up, as from other waters, by the heat of the sun. But although he thus explains the accounts of other travellers, he acknowledges that in his repeated visits to the northern borders of the lake these appearances were never visible to him, but, on the contrary, the air seemed at all times as serene and pure as in the plain of Jericho. More recent travellers have confirmed this as the general appearance of the lake. But that there were occasional appearances which, observed *in that place*, and ill understood, offered a *foundation* for the old accounts, may be collected from Irby and Mangles, who state that on their journey from Kerek to the southern extremity of the Dead Sea, they came to a pass which commanded an extensive prospect over the lake, when they could observe the effect of the evaporation arising from it in broad transparent columns of vapour, not unlike water-spouts in appearance, but very much larger.

Having dwelt on these various particulars, which enter into a description of the Asphaltic Lake, we now beg to introduce our readers to Nau, the Jesuit, whose book we have had frequent occasions to quote and to mention with high praise. Looking at his account of the Dead Sea, we have no hesitation to declare, that it is the best and most satisfactory single account that any traveller has, even to this day, furnished, although it be true that there are particular points which may have been better described by other travellers. Even the leading facts, concerning the southern termination of the lake, which, 150 years after, Captains Irby and Mangles might fairly claim to have discovered, were known to this intelligent traveller, and are duly registered in his book. We shall, therefore, conclude this survey of the information given by the old travellers with the substance of his description, after which we shall sum up such really additional information as more recent authorities have furnished.

The water is beautifully clear and transparent, though of most abominable taste. Only violent winds blowing from particular quarters are able to ruffle the surface of the lake, which is in general perfectly smooth and still, partly from its confined situation, and partly, perhaps, from the density of the water. Our author thinks that it is to this general stillness rather than to the absence of fish [which he admits], or to its deleterious exhalations [which he does not admit], that the lake owes the name of the *Dead Sea*.

Of the dense and horrible vapours covering the lake, as described by most previous writers, he could see nothing in any of his journeys; but, on the contrary, the surface always appeared to be as fair and as clear from vapours as any other water. The difference in the accounts of former travellers as to the appearance of the borders, he reconciles by observing that, in general, the shores of the lake have a burnt and cindery appearance. Nevertheless, where this burnt land has been refreshed by the rains of winter and of spring, a rather profuse herbage appears, including an unusual proportion of thorny plants and hurtful herbs.

Many other particulars we omit, to avoid repeating what has been already stated, and proceed to his peculiar and interesting information respecting the southern portion of the lake.

Nau had the good fortune, when on a journey to Damascus, to form the acquaintance of Daniel the abbot (as he calls him) of the Greek monastery of Santa Saba, which is situated about midway between Bethlehem and the northern extremity of the lake. It soon transpired that this person had several times made the complete tour of the lake, under the protection of an Arab escort. Nau, eager to avail himself of this opportunity of collecting information, showed the monk a map in which the Dead Sea was represented in the usual manner; on which Daniel informed him that the representation of the southern extremity of the lake was entirely wrong. That, in fact, a second lake was there formed, of a round figure, approaching to an oval, and connected with the principal lake by a narrowed channel. That at this point the bottom of the lake was raised in such a manner as to render the water shallow and easily fordable to the other side—not indeed being higher than the middle of one's leg. This smaller and terminating lake was surrounded by plains bounded by mountains of salt. A considerable stream<sup>a</sup> nearly from the south-east entered this smaller and terminating lake. Nau further collected that the plains beyond were occupied by numerous Arabs of different tribes, and that in the country east of the Dead Sea there were fine and fertile plains, in which were some villages, in some of which might be found churches and a population, in a considerable proportion Christian. But the churches had no priests, and the people, wanting instruction, scarcely retained any form of Christianity. Many of them were unbaptized; and such of them as from time to time desired that rite, came all the way to the monastery of Santa Saba to receive it. It seems to have been with the view of ministering in some degree to the wants of those destitute churches, that the good priest undertook the frequent journeys which furnished him with this information.

These facts have received, within the present century, ample confirmation from the accounts of Seetzen, Burckhardt, and Irby and Mangles. Indeed the exact agreement of this statement respecting the southern termination of the lake, with that which the last-named travellers have given, is very remarkable. It does, indeed, strikingly illustrate the difference in the intellectual condition of the two periods, that the information communicated by the travellers we have just named seemed all new to the public, and not only attracted immediate attention, so as to produce the corresponding modifications in all the descriptions of the Dead Sea, and in all the maps of it subsequently put forth,<sup>b</sup> but stimulated other travellers to journey in the same direction; whereas the information put forth by Nau, although on a subject in which considerable interest was felt, was perfectly abortive. It cannot be traced in any subsequent description or map; nor does any later traveller allude in any way to this statement, and far less was any one induced thereby to travel in the direction indicated. The reason is clear. Now every new fact is conveyed to the public by a multitude of different channels, till it becomes familiar by repetition; whereas, in former times, such a fact might lie hid for years or for ages in the unread work by which it was first produced.

Such is the account of the Dead Sea which we collect from old and neglected sources, with the exception of a few elucidatory points from more recent authorities. It will be found to contain nearly all that is yet known of the lake. This will appear from the notice we proceed to take

<sup>a</sup> Evidently the river El Ahsa, probably the scriptural Zared.

<sup>b</sup> When it is recollected that the work of Captains Irby and Mangles has never been published, and is difficult to procure, the manner in which their information has become common property to the public, the more strikingly illustrates the difference to which these observations are directed.

of the additional information which may be collected from later travellers. This would be more evident if we confined ourselves strictly to that which is new ; but we judge it advisable to introduce statements which, although not properly new, involve views or circumstances which confirm or elucidate the facts previously known.

The nature of the water of the lake has been distinctly ascertained by modern research. It is far more saline than the waters of the ocean ; and, although so limpid, its specific gravity is 1·2110. A quantity of it brought to this country was subjected to chemical analysis by Dr. Marcet, and was found to contain one-fourth of its weight of salts. A slightly different result was lately obtained by Dr. W. Gregory from a quantity of the water brought home by Mr. Madden. We give both statements ; and the difference between them may be accounted for by an actual difference in the qualities of the water when the lake is low and when high, from large additions of fresh water poured in by the rivers. A hundred parts of water afforded,—

MARCET.	GREGORY.
Muriate of lime . . . . 3·920	Chloride of soda, with a trace of
Muriate of magnesia . . . . 10·246	bromine . . . . . 9·58
Muriate of soda . . . . . 10·360	Chloride of magnesium . . . . 5·28
Sulphate of lime . . . . . 0·054	Chloride of calcium . . . . . 3·05
24·580	Sulphate of lime . . . . . 1·34
	19·25

Those as already noticed are the same salts, which, in an incomparably smaller quantity, are held in solution in the waters of the Jordan also.

The extraordinary saltiness of this lake is obviously owing to the quantities of saline matter brought in by the rivers from the saline tracts over which they pass, and more particularly by the winter torrents which receive and convey into the lake the rains which have washed over the salt-hills at the south-eastern extremity of the lake.\* It is easy to imagine how this constant supply of saline matter to a lake of narrow dimensions without any visible outlet, must produce an accumulation of salt which cannot pass off by evaporation.

When taken up in a glass the water appears perfectly clear ; but when viewed *en masse* under a cloudless sky, though in some parts it reflects imperfectly the azure hue, yet in others it is quite brown, owing probably to variations in its depth. The taste is described by Mr. Elliot as indescribably nauseous, salter than the ocean, and singularly bitter, like sea-water mixed with Epsom salts and quinine, or, as Madden describes, like a solution of nitre mixed with an infusion of quassia. It acts on the eyes as pungently as smoke, and produces on the skin a sensation resembling that of “prickly heat,” leaving behind a white saline deposit.

The quantity of salts which this water holds in solution accounts for its remarkable specific gravity, which every writer, from Josephus downward, has noticed. This has been found, by experiment, to exceed that of rain-water by more than sixteen per cent. “We found it practically,” says Mr. Elliot ; “for our whole party, consisting of five persons, plunged in and remained some time in the water. Although the assertion be not true that a flat dense mass of iron will be sustained on the surface, yet a man who cannot float elsewhere, finds no difficulty here. Having proceeded some way into the lake till his shoulders are nearly immersed, his feet are actually borne off the ground, and he walks, as it were, on water ; or else his legs are forcibly raised, and he is *compelled* either to float or swim. To sink or dive would require some effort. The specific gravity of the water accounts also for its reputed immobility ; it is less easily excited than any other known lake, and sooner resumes its wonted stillness.”(†)

No modern traveller has seen *smoke* issuing from the lake ; but at certain times of the year the surface is covered with a thick mist. In summer the sun has such power that this dense mass of vapours is dispersed soon after its rising. The assertion of Volney, to which

\* See before, p. lxx.



we have, perhaps, given too much weight in a preceding page, that smoke is *often* observed to issue from the lake, probably rests upon information derived from the Arabs, upon which no one acquainted with that people would place much dependence. That vapours exhale from the lake, which, although differing, perhaps, in substance, resemble in appearance those of all other lakes, is quite true; and that Arabs inhabiting a desert, the atmosphere of which is of the purest description, should call an aqueous vapour *smoke*, is not strange.

The old story, that no birds were found upon the shores of the lake, and that none could rest upon or pass over its surface without paying the penalty of death, is *not affirmed* by any of those old travellers whose statements in other matters we have been accustomed to treat with respect, but it has only been completely gainsaid and disproved by travellers of recent date. Mariti saw a great number of birds of different kinds, particularly nightingales, along the shore. Fisk, and, in a later year, Hardy, saw many birds flying about the lake, and even observed some skimming the water with as much apparent ease as in any other place. Stephens beheld a flock of gulls floating quietly on the water, and when disturbed by him, they flew down the lake, skimming its surface, till they had carried themselves out of sight. Elliot saw more wild ducks cross the sea from Moab to the hills of Judah. Professor Robinson observes,—“Of birds we saw many. Indeed, at the early dawn *the trees* and rocks and air were full of the carols of the lark, the cheerful whistle of the quail, the call of the partridge, and the warbling of innumerable songsters, while birds of prey were screaming and soaring in front of the cliffs above.” Pigeons also were observed shooting across the surface, and frogs were heard croaking merrily from the neighbourhood of a brackish fountain under the cliffs of the western shore. These last observations seem to have been made chiefly with reference to about the middle part of the western border of the lake, where vegetation, even in the form of trees, is by no means wanting.<sup>a</sup> Dead locusts were found by Irby and Mangles on the south-eastern borders of the lake. The sight of such a multitude of carcasses of creatures that might have perished in passing over these waters, might seem to confirm the old popular notion, but the travellers recollected that such a spectacle was sufficiently common upon other shores, as Sicily and about El Arish. This, however, *proves* nothing against Roger’s assertion that locusts could not cross the lake. For those which were seen on the shores of Sicily and about El Arish had obviously fallen into the water from fatigue in attempting to cross the Mediterranean—a very different undertaking from that of crossing the Dead Sea. We feel sure that locusts would not be fatigued to cross that lake, and that the presence of their carcasses in large numbers on the shore must be ascribed to some other cause than that which produces a similar appearance on the shores of the Mediterranean. This point is, therefore, still in doubt. The same travellers saw a pair of Egyptian ducks, and afterwards a flight of pigeons, pass over the lake.

It is, however, true that several travellers, of as great credit as those from whom we have taken the preceding statements, declare that they saw no birds near the lake. In fact this, like the question of vegetation, seems to be one of seasons. The want of fish in the lake would satisfactorily account for the absence of the aquatic species at any time; and the land-birds we would hardly expect to find there save when the vegetative powers which remain in the stricken soil have been called forth by the periodical rains; and, in fact, those travellers who have not observed birds, visited the lake at the season when the temporary vegetation (like that of the desert already described<sup>b</sup>) has disappeared before the intense and concentrated heat of the advancing season. The birds seem to disappear with it. Indeed it is not unlikely that the borders of this warm basin is the retreat during the colder part of the year of numerous birds, which in summer are found in other and cooler, as well as then more productive and pleasant, parts of the land.

The differences in the accounts of travellers, as to the general aspect of the lake, can, we think, be explained without much difficulty. Setting aside the influence of a prepared imagination, it may be observed that there are actual differences *at the same place* at different

<sup>a</sup> See before, p. cxi.

<sup>b</sup> See before, p. cxli.

seasons of the year, and that there are actual differences at different parts of the lake. The first point has been lately explained, and need not be dwelt on here; and, with respect to the latter, we need only add to what has been said in the preceding chapter<sup>a</sup> that the borders seem to increase in fertility on both sides the farther we advance to the south, except at the very extremity of the lake southward, which seems even more desolate than the northern extremity. In short, there seems a certain limit beyond the water's edge, within which nothing but such few plants as love a saline soil can be found; but beyond this limit an increasing vegetation appears, where ordinary circumstances are favourable. So when the breadth between the water's edge and the enclosing hills does not overpass this limit, all appears barren, except when the rigid and austere soil is mollified and excited by abundant rains; but where the intervening plain is broad, so as to afford a space beyond this limit, the soil becomes more or less cultivable, and as we advance towards the roots of the mountains, becomes spontaneously productive of various plants, shrubs, and trees. So likewise, when the *feet* of the mountains are within the steril boundary, no vegetation appears upon them, until their ascents have sloped back beyond this steril limit. The general borders of the lake are so much within this limit that the average aspect is more desolate than is usually seen on the borders of lakes. It is quite clear that the evaporations from the lake are charged with saline principles unfriendly to general vegetation. Hence vegetation is not encouraged by the moisture thus exhaled, and which might otherwise compensate for the extreme drought of its borders. Indeed, from the *wholesome* moisture supplied by evaporation, the borders of lakes, even in places where rain only periodically falls, are so generally clothed with trees and verdure, that water and vegetation become associated in the mind, so that the disappointment and surprise give an exaggerated effect to the impressions which the comparative sterility of this remarkable lake produces on the spectator.

This theory—if an explanation derived from the careful comparison of a large collection of facts can be called a theory—appears to us to explain many difficulties and apparent contradictions; and we are well assured that its correctness will abide the test of any observations which future travellers may make.

Subject to this and preceding explanations, we will trust our readers with two differently coloured descriptions of the lake, as viewed from the northern extremity. Both, while they give us general impressions, are clear and sensible, and offer some further facts necessary to complete an account which we have been anxious to render as full and satisfactory as existing materials allow. The first is that of the Rev. C. B. Elliot, whose visit was at the usual season of the pilgrimage, at Easter.

“During a ride of two hours along, or at some little distance from, the banks of Jordan, we saw not a single man or animal, and reached in safety its embouchure, where it discharges its muddy waters with considerable force into the sea of Sodom. The soil appeared to be a mixture of sand and clay, the former being superficial and apparently a deposition from the water during its annual overflowings. Very minute shells lie scattered in myriads over the plain; but in the immediate vicinity of the lake of death, even these symptoms of a by-gone life are no longer visible; their place is occupied by little masses of a white frothy substance exuding from the earth, resembling in shape and size the turbinated cones thrown up by worms. When taken in the hand, these almost melted, leaving a smell of brimstone; they looked like a sulphurous efflorescence in combination with salt; but the taste indicated the presence of something more than these ingredients. No signs of vegetation are to be seen except sea-weed and another marine production.

“The air, even at seven o'clock in the morning, was heavy and oppressive, though the sky was cloudless and the heat not unpleasant. We saw no symptoms of the smoke said to be the effect of bituminous explosions underneath the lake and to arise constantly from its surface, but a mist covered it, which might have been nothing more than the ordinary effect produced by the morning sun. Hemmed in, as the water is by mountains absolutely barren, themselves of a gloomy hue, the sand and clay below reflecting no brighter rays, it is not sur-

<sup>a</sup> Pages cx. and cxl.

prising that every object should wear a dreary aspect, and the very eye be deceived into a belief,—if deception it be,—that the only colour it discerns partakes of a sombre livid tint. The air is regarded as pestilential; no human dwellings are to be seen; and probably no spot in the world is so calculated as this to convey the idea of an entrance into the kingdom of death. Here death wields a leaden sceptre. The eye perceives only the absence of life. The ear is cheered by no sound,—even the waveless sea sleeps in mysterious silence. The taste and smell detect only that mineral which is too intimately associated in the mind with unquenchable fire and eternal death; and the sense of feeling becomes more sympathetically affected, as though every nerve were on the verge of dissolution. In this region of death the living exception is ready to exclaim, ‘How dreadful is this place!’”

The other description is from the recent American traveller, the Rev. J. D. Paxton.

“In going from the Jordan to the Dead Sea, for a considerable space not a blade of grass or vegetation was to be seen. It was so soft and dusty, that the horses sank to their fetlocks; and in some places it was rendered uneven by the irregular mounds, many of which did not seem to know what vegetation is. Whether this peculiar barrenness was owing to the unfavourable nature of the soil I know not; possibly this may be the case. I did not see any other indication of salt, which has been reported as found on the surface of the ground, until very near the sea. Between this barren district and the Dead Sea, there was an evident change in the aspect of the ground—we found some dry grass and small bushes; and as we came nearer the shore, the bushes increased in size and number, and some spots might be called thickets. We saw also a cane brake and a variety of other growth. To my agreeable surprise, I found the shore fine, smooth, gravelly, and deepening very slowly, so that a person might wade in for some distance. There was along the shore drift-wood, most of it small, but still larger than I had seen on the Jordan. This would seem to indicate that somewhere on its shores there is more timber than we found in the spot we visited. The water was not only very salt but exceedingly bitter, as much so as most travellers have stated. The great density of the water was amply proved by its power to bear up the body. There is some truth in the saying that it requires an effort to keep the feet and legs under, so as to use them to advantage in swimming. Some writers have, however, stated the matter in rather too strong terms.

“I could lie on my back in the water, with my head, hands, and feet all out at the same time, and remain thus as long as I pleased without making any motion whatever; this I could not do in any other water that I have been in. Still it is carrying the matter too far and beyond the truth, when it is said to be so heavy, or so dead, that it never rises in waves, but always lies smooth and unruffled, let the wind blow as it will. The drift-wood thrown out is evidence to the contrary. The shore exhibited proof that but a day or two before the waves had run high; but the best proof of all was the ocular and sensible one, that they were then chasing each other out on the shore, as they do in all other seas; true they did not run high, but then there was not much wind to make them. The water was so clear that the bottom could be seen with great distinctness. In wading in, there was at some places more softness at the bottom than I was led to expect from the firm character of the shore. There were, however, some spots on the shore where the soil gave way under our feet, and exhibited a kind of quicksand, as I demonstrated by getting into one of them over my shoes. Still the bank, the water, and the bottom, so far as I saw and tried it, had much less of the terrible, fearful, and unnatural, than I had expected. Instead of that dark, gloomy, and turbid spread of water, that from my childhood I had imagined, it struck me as a very pleasant lake. It reminded me of the beautiful lake of Nice. As to the deep and fearful gloom which many writers describe as hanging over it, I must think that it is mainly found in their imaginations. It is not wonderful that a place, which, for its great wickedness, was doomed to such a fearful catastrophe as were the cities which stood on this plain, should be looked upon with fear and horror. It is a wise provision of our nature that it should be so. It operates, and no doubt it is designed to do so, as a check to that fearful wickedness that calls down such a doom. It is not an uncommon thing for people to think that there is something fearful and gloomy in places

where they know awful crimes have been perpetrated ; and on this principle, perhaps, we may account for the fact that so many travellers have dwelt on the deep gloom which hung over the water, and the fearful desolation that reigned over the whole region. Now to me it did not appear thus : the shores, the waters, and the lake, had a natural and even a pleasing appearance, the more so as, from my old habits of thinking, I expected something of the fearful, if not terrible. The district was, it is true, rather destitute of trees and vegetation, but not more so than many districts that I have seen ; not more so than the district from Mount Olivet to the plain of Jordan, and a very large district near Damascus, which I noticed in a former journey. There are more small trees, bushes, canes, and other vegetable growth, for a quarter of a mile along the shore, than there are on some districts north-west of Damascus, perhaps ten miles square, leaving out the narrow slips of land irrigated by the water of the Bareda. There is quite a cluster of small trees or shrubs at a point on the edge of the water, where it is soft and swampy. The question whether there are any living things in these waters is one that I am not able to decide from my own observation. I saw none.

“There is a small island fifty or a hundred yards from the shore, rising six or eight feet above the level of the water, and appears to have some stones at the upper part of it. We thought we could see most distinctly another island far to the south.<sup>a</sup> As similar statements have often been made, and again contradicted, we looked at it the more carefully ; and our conclusion was, notwithstanding all the declarations to the contrary, *it must be an island*, and one of considerable size, unless connected with the other shore by a very low neck of land which the great distance prevented our seeing : this time will show. It is a singular fact that a piece of water, which for ages has excited more intense interest than any other in the world, should yet be so little known, and so few should have been found who have made a serious attempt to explore it. There has not, as far as I know, been one boat on the waters of the Dead Sea for ages, if from the days of Abraham ; there may have been in the days of the Jewish nation, but I have not seen it confirmed by any writer. Last year an intelligent Irishman took a boat across from Acre to the lake of Tiberias, and after amusing himself with it on that lake, he passed down the Jordan to the Dead Sea, and spent some days in exploring it. How far he went to the south, and what discoveries he made, is not known. He had the misfortune to be taken sick, owing in part, it was supposed, to his imprudence and useless exposure. With much difficulty he got back to Jericho, and was then carried to Jerusalem, where he died. He had taken but few notes, which were unintelligible to all but himself.<sup>b</sup> When inquired of concerning his expedition on the Dead Sea, he declined answering until he should recover, when he would tell them all about it. But death closed up the communication for ever. The boat was taken out and carried to Jericho, as I have since learned. Were some one, acquainted with navigating a small vessel, and capable of taking soundings and making a proper survey of the lake, to spend a month or two in doing it, and to publish a full account, with a correct map of the sea and the coast, he would confer a very great favour on the Christian world. It would be so easy of execution, and of so universal interest when done, that I wonder that none of those men who long for public fame have not before now thought of it.”

We sincerely join in the regret that the public have been so unhappily excluded from reaping the benefit of the observations made by Mr. Costigan (for that was the name of “the intelligent Irishman” of whom Paxton speaks) during his romantic expedition. The further information collected by Mr. Stephens is, for the present, at least, of too much interest and value to be omitted.

This gentleman reports that he took some pains to trace out the man who had attended Costigan during this voyage, and had the good fortune to find him at Beirout. “He was a little, dried-up Maltese sailor ; had rowed round the lake without knowing why, except that he was paid for it ; and what he told bore the stamp of truth, for he did not seem to think

<sup>a</sup> The first is a real island ; the other must have been an illusion.

<sup>b</sup> “Unfortunately for the interests of science he had always been in the habit of trusting greatly to his memory ; and, after his death, the missionaries in Jerusalem found no regular diary or journal, but merely brief notes written on the margins of books, so irregular and confused, that they could make nothing of them.”—STEPHENS.

that he had done anything extraordinary. He knew as little about it as any man could know who had been over the same water; and yet, after all, perhaps he knew as much as any one else could learn. He seems, however, to have observed the coast and the soundings with the eye of a sailor, and I got him to make me a map,<sup>a</sup> on which I marked down the particulars I received from his lips; and by which it appears that they had completed the whole tour of the lake." The following is the substance of the observations thus obtained:—

The tour of the lake took eight days, the voyagers sleeping on shore every night, except once, when, afraid of some suspicious-looking Arabs whom they saw upon the mountains, they slept on board, beyond the reach of gun-shot from the land. All this time was not, however, occupied in making the direct tour of the lake; for during their course they crossed and re-crossed it several times. They sounded every day, frequently with a line of 175 brachia (about six feet each), and found the bottom rocky, and of very unequal depth, sometimes ranging thirty, forty, eighty, twenty brachia, all within a boat's length (!). Sometimes the lead brought up sand, like that of the mountains on each side. They failed in finding the bottom but once, and in that place there were large bubbles all around for thirty paces, rising probably from a spring. In one place they found on the bank a hot sulphur spring. In three different places they found ruins, and could clearly distinguish large hewn stones, which seemed to have been used for buildings. That which in the distance has appeared to many travellers as an island towards the southern extremity of the lake, was found to be a tongue of land, as had long before been shown by Captain Mangles. This incidental corroboration of the old man's statement, from a source which he could not know, and with which Stephens himself was unacquainted, may lead us to regard his statement as in general trustworthy.

This man also reported that the boat, when empty, floated a palm higher in the water than when in the Mediterranean. It was then the month of July, and the weather from nine to five was dreadfully hot. Every night the north-wind blew, and the waves were worse than in the Gulf of Lyons. "In reference to their peculiar exposures, and the circumstances which hurried poor Costigan to his unhappy fate, he said that they had suffered exceedingly from the heat. The first five days Costigan took his turn at the oars; but on the sixth day their water was exhausted, and Costigan gave out. The seventh day they were obliged to drink the water of the sea, and on the eighth they were near the head of the lake, and he himself (the Maltese) exhausted, and unable any longer to pull an oar. There he made coffee from the water of the sea, and a favourable breeze springing up, for the first time they hoisted their sail, and in a few hours reached the head of the lake." The rest has been told above by Paxton.

A very similar attempt to this has more recently been made by two scientific gentlemen, Mr. G. Moore and Mr. W. G. Beek. Their intention was to make a trigonometrical survey of the Dead Sea, to ascertain its depth, and to procure collections of all that could be of use to science. From Jaffa they conveyed a boat, with stores, etc., to the lake, passing through Jerusalem and descending on Jericho, a work of great labour, considering that they had no assistance from the authorities, but rather the contrary. After surveying a good portion of the shores, these gentlemen were obliged to abandon their work, the guards and guides declaring they would not proceed. The width of the sea has been established beyond a doubt; soundings also have been taken showing great depth. The length of the sea was found to be much less than has generally been supposed. These are all the facts, or rather intimations, which these gentlemen have as yet thought proper to lay before the public;<sup>b</sup> but Mr. Moore has, we believe, since completed the unfinished undertaking, under the operation of a firman from the Pasha of Egypt; and we may hope to be soon made acquainted with the full results of this very spirited enterprise. It thus appears that what Mr. Paxton so anxiously wished to be done has actually been effected, although the public has not yet been informed of the result.

We have so often alluded to the discoveries of Captains Irby and Mangles about the southern

<sup>a</sup> Copied in the original American edition, but injudiciously omitted in the English reprint, to which only we have access.

<sup>b</sup> In the 'Geographical Journal,' vol. vii. pt. 2. 1837.

extremity of the Dead Sea that it seems undesirable to conclude this notice without stating such of the leading facts as have not already been anticipated.

Their first journey in this quarter, being from Hebron round the southern extremity of the lake to Kerek. When, on this journey, they first obtained a view of the southern termination of the lake, with the back-water, or smaller lake, and plain at the end of it, it appeared evident to them that the sea must be of much less length than ancient authors had reported. But we may observe that from their account it is far more than likely that this plain at the end formed an integral part of the lake, in which case its dimensions would correspond very closely with that which in a preceding page form the account of Josephus. And the conclusion that this plain was formerly covered with the waters of the lake, even to the foot of the hills, southward, which separate it from the Wady Arabah seems to us probable for another reason. For if the plain were then passable, it seems difficult to make out why the Israelites, when wishing to pass into the country east of the lake, did not go that way, which would have been the nearest and the most open they could take; but, instead of that, they sought permission to pass through the valleys of Mount Seir, and when that was refused them, had no alternative but to take a long and difficult circuit, to get into the eastern country by rounding the southern extremity of the Seir mountains, near the head of the eastern arm of the Red Sea—a most unaccountable journey if there had then been that access to the eastern country at the extremity of the Dead Sea which is now open.

But to return to our travellers. They spent the night near the hills skirting this plain, and finding plenty of drift-wood at “high-water mark,” they attempted to kindle a fire to bake bread, but were unable to do so in consequence of the salt with which the wood was impregnated. The abundant manifestations of salt which they found in crossing the plain have already been noticed in this work;<sup>b</sup> for which reason we limit the present notice to their other observations. It appears from their statement that when the sandy flats around the southern bay, or smaller lake (which they call “the back-water”) are left dry by the effects of evaporation, water is still left in various hollows, or depressions of the surface, from which it gradually disappears, partly by evaporation and partly by draining, leaving a thick residuum of salt. Those that still retained water, or were still wet, had a strong marshy smell, similar to that which is perceivable on most of the muddy flats in salt-water harbours. This it is, they imagine, which gave rise to the unfavourable reports of the ancients, of the disagreeable smell of the waters of the Dead Sea; for they affirm that the water of the main body of the lake is perfectly free from any smell whatever.

On their return from their expedition from Kerek to Wady Mousa, the same travellers made a special excursion for the purpose of exploring the southern termination of the lake.

In this journey they observed a rather profuse vegetation, so comparatively near to the beach as might, without explanation, seem to militate against the explanation we lately gave. But it is to be borne in mind that the bed being here very shallow, although the vegetation approximates to the *high-water mark*, the waters fall further back in this quarter, after the season of flood, than in any other part of the lake, removing, to that extent, the water from which the influences unfavourable to vegetation arise. Thus, during its absence, the trees and shrubs, assisted by the fresh water which the rivers bring down,<sup>c</sup> are able to gather strength to withstand the deleterious influences to which they are, during a portion of the year, exposed. But although the waters had fallen very much below the mark of high water at the time of our travellers' visit, they describe the foliage as having a salt dew hanging upon it, which gave to the hand the same greasy sensation and appearance which it acquires when dipped in the sea itself.

The appearance which the lake assumes at its southern termination will be much better understood by the annexed plan than by a written description. From this it will be seen that

<sup>a</sup> See the History, p. 316.

<sup>b</sup> See before, pp. lxi. and lxx.

<sup>c</sup> To a similar cause—the dilution of the waters of the lake, at the northern extremity, by the constant supply of fresh water from the Jordan,—may be ascribed the vegetation which Paxton saw near the water's edge, not far from where that river enters the lake.

a large promontory projects from the eastern shore, and turns northward, so as to enclose between itself and the eastern coast a bay about four miles long, by two broad, while between it and the western shore lies a gradually narrowing strait, which conducts into the oval basin,



[Southern termination of the Dead Sea.]

about five miles long by above three in width, in which the Dead Sea terminates. A small opposing promontory from the western shore narrows the strait in one place to about a mile of width; and at this point is the ford which, with the other general features of the spot, was so long ago indicated by Father Daniel. It appears that the ford is marked by stakes, and Captain Mangles' party was informed that it was unfordable at no time of the year. Indeed its depth could be but inconsiderable at the time they were there, as there were asses in a small native caravan by which it had just been forded.

The promontory from the eastern shore has a steep white ridge, running like a spine down the centre. This ridge presents steep sloping sides, scamed and furrowed into deep hollows by the rains, and terminating at the summit in sharp triangular points, standing up like rows of tents, ranged one above another. The whole is of a substance apparently partaking of the mixture of soft and broken chalk and slate, and is wholly unproductive of vegetation. The height of the eminence varies from ten to thirty feet, becoming gradually lower towards its northern extremity. At its foot, all round, is a considerable margin of sand, which varies in length and breadth according to the season, being much narrower in the dry season than in the times of flood, when we have reason to suppose that,

in rough weather at least, the waves almost wash the base of the cliff.

At the base of the peninsula, not far from the bottom of the bay formed by its horn, and near a river (called Dara) which falls into that bay, the traces of an ancient site very plainly appear. Stones that have been used in building, though for the most part unhewn, are strewed over a great surface of uneven ground, and mixed both with broken bricks and pottery. This appearance continues, without interruption, quite down from the slope of the peninsula to the plain below, so that it would seem to have been a place of considerable extent. One column was noticed, and a pretty specimen of antique variegated glass was found. This our travellers think may have been the site of the ancient Zoar, in which Lot found refuge when the cities of the plain were destroyed, and, on examining the matter for ourselves, we find much reason for subscribing to this opinion. (\*) Close by these is now a hut-built village, occupied by Arabs. From the heat of the climate the people go half naked in summer, and the children entirely so; and, altogether, their abode has more the appearance of a village in India or the South Seas than any that our nautical travellers had seen in the East.

Although there seems great probability, as we have already intimated, that this peninsula has, in the distant view, been sometimes taken for an island, it seems that other apparent masses, noticed in other parts, and confidently affirmed by travellers to be islands, must be attributed to an illusion; for our travellers state,—“This evening, about sunset, we were deceived by a dark shade on the sea, which assumed so exactly the appearance of an island that we did not doubt of it, even after looking through a telescope. It is not the only time that such a phenomenon has presented itself to us. In two instances, looking up the sea from its southern extremity, we saw it apparently closed by a low dark line, like a line of sand, to the northward; and, on another occasion, two small islands appeared to present themselves between a long sharp promontory and the western shore. We were unable to account for these appearances, but felt little doubt that they were those that deceived M. Seetzen into the

supposition that he had discovered an island of some extent, which we have had an opportunity of ascertaining, beyond all doubt, does not exist.”<sup>a</sup>

We have, on more than one occasion, stated as a fact to which we attached much importance, that the great valley which extends between the Dead Sea and the Elanitic Gulf was probably a continuation of the ancient valley of the Jordan, by which the river made its way to the Red Sea before its waters were arrested in the Asphaltic Lake. This opinion was first started by Burckhardt, and was adopted by others who afterwards visited the valley. Burckhardt, however, did not see how this valley connected itself with the Dead Sea. Irby and Mangles, who did so, observe that the plain at the end of it “opens considerably to the south, and is bounded at the distance of about eight miles by a sandy cliff, from sixty to eighty feet in height, and which runs directly across, and closes the valley of El Ghor, thus forming a margin for the uttermost limits of the Dead Sea to the southward, when its waters are at their greatest height.” We were told that the plain at the top of this range of cliffs continues all the way to Mecca without any interruption of mountains.” This fact, confirmed and followed up, is no other than that on which the former conclusion has been lately questioned, and, we are almost sorry to admit, overturned. How it happened that the statement of Mangles was not considered to oppose an obstacle to this conclusion, we do not know, unless, as in our own case, from an unwillingness to dwell upon this single incident as irreconcilable with an opinion which such a traveller as Burckhardt thought he had good reasons to form; and also perhaps from some vague notion that these cliffs might prove to be mere sand-banks, thrown up, in the course of ages, at high-water mark.

Count de Bertou examined this matter more closely. As all the passages which bear on the question have been produced in the preceding chapter, we shall not here repeat them. These, it will be recollected, show that the confining southern hills are of sandstone; that there is indeed the broad valley of a river or torrent passing through or at the end of this chain of hills, but this slopes sensibly *towards* the Dead Sea, and could never therefore have been the bed of a river flowing in the opposite direction; that all the torrents and streams far to the south of this tend towards the basin of the Dead Sea; and that the point where the waters separate occurs below Wady Mousa, or rather at Wady Talh, about midway between the hills which border on the basin of the Dead Sea and the head of the Elanitic Gulf;—all the waters north of this limit tend to the former basin, and all south of the same limit to the latter.

Professor Robinson confirms this statement in all essential points. The following passage deserves attention, as explaining what is rather obscure in the notices of the Count:—“Before us, as we advanced southward, appeared a line of cliffs, *fifty to one hundred and fifty feet in height*, [“fifty or sixty,” *Count B.*] stretching across the whole broad valley, and apparently barring all further progress. They proved to be of marl [“friable sandstone,” *Count B.*]; and run off from this point [the western end] S.S.E. across the valley. All along their base are fountains of brackish water, oozing out and forming a tract of marshy land towards the north. Our route now lay along the base of these cliffs, and we came in two hours to the mouth of Wady Jib, [the same which Count de B. calls Wady Araba, but which is here distinguished as a Wady *in* Wady Araba] a deep valley *coming down from the south* through the cliffs; and showing the latter to be only an offset between the lower plain which we had just crossed, and *the higher level of the same great valley further south*. The name El Ghor is applied to the valley between the Dead Sea and this offset: further south the whole of the broad valley takes

<sup>a</sup> The following are the authorities which have chiefly been consulted in drawing up the above account of the Dead Sea. They are named here in chronological order:—

Josephus, de Bell., v. 5; Antoninus Martyr, ‘Itinerarium,’ 9; Adamnanus, lib. ii. p. 14, 15; Amselm, ‘Terre Sancte Descriptione; Brocard, part i. c. 7, sect. 2; Vitriaco, 89, 90, in edit. 1537; 1075-6, in Gesta Dei per Francos; Adrichomius, 52; Quaresmius, lib. vi. cap. 13, par. 5; Lightfoot, Chorog., Cent., ch. 5; Nau, 577-588; Morison, ch. xxx.; Shaw, ii. 157, 158; Hasselquist, 130, 131, 284; Mariti, ii. ch. 25; Irby and Mangles, 351-356, 446-459; Hardy, 201-204; Monro, i. 145-148; Mudden, ii. 349-357; Robinson, i. 63-71; Arundale, 81-84; Elliot, ii. 479-486; Lindsay, ii. 64-66; Stephens, ii. ch. 15; Robinson (Dr.), in Am. Bib. Repose., No. xxxiv; Paxton, 159-163; Geographical Journal, vol. vii. pt. 2, p. 456.

<sup>b</sup> Is it not probable that Josephus and other old writers measured the Dead Sea as extending to these cliffs, as it seems actually to do at high water; and that hence arises the greater length which they give to it?



the name of El Araba, quite to Akabah. These apparent cliffs I take to be the Akrabbim of Scripture. The Wady Jib begins far to the south of Mount Hor, beyond Wady Gharandel, and flows down in a winding course *through the midst of El Araba, draining off all its waters northward to the Dead Sea.* Where we entered Wady Jib, at its northern end, it is half a mile broad, with precipitous banks of chalky earth or marl, 100 to 150 feet high, and exhibiting traces of an immense volume of water *flowing northward.* It may be recollected that the waters of Wady Jarafeh in the western desert, which drains the south-east part of that desert, far to the southward of Akabah, also flow northward into El Araba, and so, of course, through Wady Jib. Hence, instead of the Jordan flowing southward to the Gulf of Akabah, we find the waters of the Desert further south than Akabah *flowing northward into the Dead Sea.* The very nature of the country shows, without measurement, that the surface of the Dead Sea must be lower than that of the Red Sea or the Mediterranean.\*

This is still stronger than the statement of Count de Bertou; for while he divides the waters which flow into the Araba between the Dead Sea and the Elanitic Gulf, Dr. Robinson gives them all to the Dead Sea. But seeing that the statement of the former is the result of an actual observation, it is rather to be received, in this point, than that of Dr. Robinson, which is a conclusion in the absence of such observation.

After this the serious and difficult question recurs, which was obviated by the explanation by which the waters of the Jordan were carried to the Red Sea—namely, What became of the Jordan, when, as is generally supposed, it merely passed through and watered the plain which the Dead Sea now covers?—1. Were its waters consumed, like those of the Barrady at Damascus, in irrigating the fields and gardens, and in supplying water to the towns of the plain? 2. May there not have been a lake in this basin, in former times, to receive the Jordan; and then may not the “plain” or “vale” in question mean merely the borders of that lake; according to what appears to be the meaning of Josephus, who seems to speak of the land of Sodom, as still existing *as land*, though in a condition sadly altered from its former state? It would not be necessary to suppose that the lake then encroached beyond the channel and ford which we have already described, and where there are appearances which may be construed to intimate to the geographer that there was an ancient breach of the waters at this point, whereby the whole country southward, down to the hills, was inundated, as it still seems to be during the season of flood, although the water beyond the ford only remains permanently in the southern lake or back-water. This would give a tract above twenty miles long by ten or twelve broad, beside the borders of the lake, as the land which was ruined at the overthrow of Sodom, and in which the “cities of the plain” were situated. In confirmation of this we might point to Gen. x. 19, in which the five cities, by being opposed to Gaza, seemed to be brought together near the present southern extremity of the lake. To this may also be added that Sodom, at least, could not well have been to the north of the channel formed by the tongue of land; for the short time which was taken by the family of Lot in escaping to Zoar shows it could not have been far from that city, which unquestionably was on the borders of the present southern extremity of the Asphaltic Lake. When viewed apart from our preconceptions on the subject, there will be found no passage of Scripture which distinctly intimates that “the plain of Siddim” was submerged. It is described as having become a region of salt and burning, and bitterness, and desolation—but not of *water.* 3. If neither of the above hypotheses be considered tenable, there seems no alternative but to consider that the overthrow of Sodom was attended by a far greater and more extensive derangement of the earth’s surface—by the depression of high levels and the elevation of low ones through large tracts of country, than has hitherto been imagined, or than the Scripture would lead us to expect. We refrain at present from attempting to make up our minds to any of these alternatives, expecting that some further and clearer light may speedily be obtained from the researches which are now in progress, or which we may hope soon to be undertaken.

We will now proceed to notice the streams which fall into the Mediterranean. As they

\* Pages cxi—cxiii.

have all been named, and some of them slightly noticed in the survey of the coast given in the last Chapter, we shall now confine our attention to those which cross "the plain of the sea" southward from Sidon; and among these we shall neglect the small brooks and torrents, and limit our attention to those which are of some relative importance, or with which any circumstance of interest is connected.

*The river Kasmia*, which is now generally supposed to be the same as the ancient *Leontes*, is the first which, within this limit, requires notice, and is also by far the most important, after the Orontes, of all the Syrian rivers which advance to "the great sea." It has already been noticed in a general way (cliiv). This river is formed by the junction of several streams, all of which rise in the neighbourhood of Baalbec. After this junction it retains for more than half its course the name of the stream which contributes the most largely to its formation, the *Nahr Lieltani*, after which it takes that of *Nahr Kasmia*, the origin of which Sir W. Drummond would refer to the verb *kasam*, which signifies *to divide*, as in fact the territory of the Tyrians was separated by this river from that of their Sidonian neighbours on the north. Pursuing its way southward between the two Lebanons, it receives the waters which fall from both: and, after a course of above eighty miles, enters the sea about four miles to the north of Tyre. About the middle of its course, this river was crossed by Maundrell on a stone bridge of five arches. He calls it here "a large river" (in April). The bridge was some years since repaired, and a khan, for the accommodation of travellers, built near it by the Emir Beshir. Some thirteen miles lower down, the river was crossed by Buckingham on his journey from Damascus to Sidon (also in April) by a bridge of two arches. The stream was here about 100 feet wide, and the water deep and rapid in its course. On its approach to the sea, the banks of this river are very picturesque. It comes out into the plain from an extensive valley among the mountains, as a large and deep river, and continues its course to the sea in various windings and meanders. On the usual road between Sidon and Tyre there was formerly a stone bridge of four arches over the stream. This was in ruins at the time of Maundrell; and its place is now supplied by a bridge of one arch, below which the stream encloses a small island.

Some of the older writers very erroneously identify this river with the ancient *Eleutherus*, an error which we believe Maundrell was the first to point out. It does not appear that this river is on any occasion mentioned in Scripture. It was on the shore between the mouth of this river and Tyre that the Phœnicians were accustomed to collect the shell-fish called the *murex*, from which they obtained the dye, so famous under the name of the Tyrian purple.\*

*The Nahr Kardamus* is unquestionably the river *Belus* of the ancients, from which it would appear that it was consecrated to Baal by the ancient Phœnicians. It is not mentioned in Scripture, but is noticed by Josephus under the name of Beleus. It is a slender stream, the source of which does not appear to be known, although it cannot be very distant. Quite near its mouth this river is shallow enough in summer to be forded on horseback. Its sands have a fine appearance, and are famous in ancient history and fable, which attributes the first discovery of glass to the effects produced by a culinary fire kindled upon them. Although it was ultimately found that other sands possessed the same property, yet it appeared that the sand of this river might be vitrified with more ease, and that the glass was of finer quality than any other. The Phœnicians took advantage of this discovery, and the Sidonian glass was in ancient times very famous. Vessels visiting this coast used to take this sand as ballast. Down to a comparatively recent date, vessels from Italy continued to remove it for the glass-houses of Italy and Genoa; and Mariti affirms that the magnificent glasses, for the manufacture of which that people were so long celebrated, were made from the sands of this river. It seems, however, that the same or nearly the same qualities were possessed by the sands of all the rivers of this coast, from Tyre to Joppa.<sup>b</sup>

"That ancient river, *the river Kishon*," occurs farther to the south, traversing the same

\* Drummond's 'Origines,' iii. 117; Burckhardt, 4, 8, 9, 15, 237; D'Arvieux, ii. 5; Maundrell, 48, 120; Buckingham, 'Arab Tribes,' 407; Irby and Mangles, 199.

<sup>b</sup> Pliny, *Hist. Nat.*, xxxvi. 26; Strabo, *Geog.*, lib. xvi. p. 1077; Josephus, *De Bell. Ib.* ii. c. 10, sect. 10; Reland, p. 289; Maundrell, 56; Shaw, ii. 32; Mariti, ii. 110, 111; Clarke, iv. 125, 126; Buckingham, 'Palestine,' ch. v. and vii.; Monro, ii. 56.

plain, and flowing into the south-eastern corner of the same bay of Acre. It is a much more considerable stream than the Belus, and is historically celebrated in Scripture for the overthrow of Sisera's host by its overflowing stream. It is usual to trace the source of this river to Mount Tabor, but Dr. Shaw affirms that, in travelling on the south-eastern brow of Mount Carmel, he had an opportunity of seeing the sources of the river Kishon, three or four of which lie within less than a furlong of each other, and are called *Ras el Kishon*, or the head of the Kishon. These alone, without the lesser contributions nearer the sea, discharge water enough to form a river half as large as the Isis. During the rainy season all the water which falls on the eastern side of Mount Carmel, or upon the rising grounds to the southward, empties itself into it in a number of torrents, at which times it overflows its banks, acquires a wonderful rapidity, and carries all before it. It was, doubtless, at such a season that the host of Sisera was swept away in attempting to ford it. But such inundations are extemporaneous only, without any duration; <sup>a</sup> for the course of the Kishon, which, according to this account, is only about seven miles in length, runs very briskly, until within half a league of the sea. But when not augmented by rains, it never falls into the sea in a full stream, but insensibly percolates through a bank of sand, which the north winds have thrown up at its mouth. In this state Shaw himself found it in the month of April, 1722, when he passed it.

Notwithstanding Shaw's contradiction, the statement that the Kishon rises in Mount Tabor has been repeated by later writers as confidently as ever. Buckingham's statement, being made with reference to the view from Mount Tabor itself, deserves some attention. He says that near the foot of the mountain, on the south-west, are "the springs of Ain el Sherrar, which send a perceptible stream through the centre of the plain of Esdraelon, and form the brook Kishon of antiquity." Farther on, on reaching the hills which divide the plain of Esdraelon from that of Acre, the same traveller saw the pass through which the stream makes its way from the one plain to the other. From the attention we have had occasion to pay to similar rivers, it does not seem to us difficult to reconcile these seemingly adverse statements. It will very probably be found, on further inquiry, that the remoter sources of the river are really in Mount Tabor; but that the supplies derived from this source dry up in summer when not augmented by rains or contributory torrents; whereas the copious supply from the nearer springs at Ras el Kishon, with other springs lower down, keep it up from that point as a perennial stream, even during the drought of summer. Thus, during one part of the year, the source of the full river will appear to be in Mount Tabor, while, during another part, the Ras el Kishon will be the source of the diminished stream.

The banks of the river are very sandy, as are also the shores of the bay into which it flows. Hence the interception of its waters, when low, by the sand thrown up at its mouth, and instead of passing to the sea, forms a small lake near Caipha. Of course it overcomes this obstruction in the season of rain. At such times the increase in the quantity and force of its waters is so disproportionately great that many serious accidents have occurred in the attempt to cross it. For one instance, Mariti reports that the English dragoman and his horse were drowned in such an attempt, in the month of February, 1761. In April, Monro found the river deep and about thirty yards wide: he crossed it in a boat.<sup>b</sup>

Of the brooks which flow from the hills of Samaria, and pass to the sea across the plains which lie between Carmel and Joppa, the two named Zerka and Kanah are those only that require particular notice.

The Zerka, which must not be confounded with a far more important river of the same name beyond Jordan, seems to take its name from a village so called upon its banks: it

<sup>a</sup> We have ourselves observed of such rivers in different countries, that the duration of the inundation is proportioned to the length of their course.

<sup>b</sup> The reader may be cautioned not to apply the rule of this and similar rivers to the Jordan. By so doing, the statements we have given might be made to seem contradictory. The fact is that the Jordan, and other such rivers, receive a great increase of waters after the rainy season is over, from the melting of the snows of the mountains near its source. But such rivers as the Kishon are increased by rains only, and their inundations are therefore over before those of the rivers, which are increased by the melting of distant snows. The increased heat of late spring or early summer is necessary to produce these latter inundations.

The authorities for the above notice of the Kishon are—Shaw, ii. 32; Maundrell, 56; Mariti, 112; Buckingham, i. 168. 177; Monro, 55.

falls into the sea about three miles north of the ruins of Cæsarea. It is of course an inconsiderable brook, save in winter; and is chiefly remarkable for its supposed identity with the Crocodile River of Pliny. From its proximity to Cæsarea, there is good reason to conclude that this is the river that he intended to denote by the name. The Arabs in the neighbourhood positively affirm to travellers that crocodiles exist in this stream, but admit that they are of small size. As they do not appear to be found in any other river of Palestine, those travellers who have been induced by the correspondence between Pliny and the modern inhabitants to pay some attention to the subject, have been led to conclude that some large species of lizards have been taken for small crocodiles; while others, going farther in their belief, think that there are real crocodiles, of degenerated growth, descended either from such as an Egyptian colony in this neighbourhood imported as sacred animals, or from such as might have been brought here, as to Rome, to be used in the zoological combats which were celebrated at Cæsarea in the time of the Herods and of the Roman procurators. But the proper seat of these crocodiles, according to most accounts, was a lake, with which this river communicated, and to which the Arabs give the name of Moiet-el-Temsah, or the Crocodile Lake, which is exactly the name (*Crocodilorum Lacus*) given to it by the ancients. Buckingham and others remark, that they could not find this lake in the site assigned to it by D'Anville; but this does not prove that it does not (or at least did not) exist in a situation somewhat different from that which he assigns to it: for its name has descended to us from ancient times, and there are not wanting travellers who affirm that they have seen it. And in such cases, the affirmation of those who tell us that they have seen, is of more weight than the negation of those who tell us that they have not seen. Among those who describe the lake as having seen it, are Brocard, Breidanbach, Roger, and Surlius, who were all something more than mere passing travellers. Roger describes it as a lake of soft water, about a league in circuit, deep, and abounding in fish; and as being formed by springs arising within itself. Both he and Surlius relate an anecdote which seems to have made much noise in their time—that in the year 1628, a crocodile issued from among the reeds of the lake of such size and strength that it was able to seize and carry off in its jaws an ass, dragging also a large stone to which the animal had been tied by the peasant to whom it belonged. Nau also affirms that calves have sometimes been carried off by the crocodiles of the river. One may suspect that the sins of other creatures have, in these cases, been imputed to the crocodiles; but with respect to the lake itself, the verity of the old geographers and travellers have been confirmed by the Rev. V. Monro, who observed it, and describes it as the Crocodile Lake of D'Anville, and the Moiet-el-Temsah of the Arabs. It is a small low-lying lake, overgrown with reeds, and abounding in fish. It is supplied by a stream running from the east. The latter was crossed by the traveller, half a mile beyond, near to where it issued from a small mere, by an artificial passage through a ridge of rock that still bears traces of a bridge or arch which once spanned the channel.<sup>a</sup>

About twelve miles to the south of Cæsarea, is the Nahr-el-Kasab, a brook, of which we find nothing memorable save the probability of its being the "river Kanah" of Josh. xvi. 8. and xvii. 9.

About ten miles to the south of this, and nearly the same distance to the north of Joppa, is another small river, shallow, and easily forded, near its mouth, even in January. It is called Nahr-el-Arsouf, and is chiefly noted for a celebrated castle of the same name which stood near its mouth, in the time of the Crusades.<sup>b</sup>

A little before we reach Joppa, we cross the Nahr-Abi-Petros, over which there is a bridge, and on whose border the ancient city Lod, otherwise called Lydda and Diospolis, stood.

About twelve miles to the south of Joppa, the traveller reaches the Nahr-el-Rubin, which he usually crosses close to the remains of a Roman bridge, one great arch of which and part of another still remain, overgrown with bushes and weeds. The river above the bridge was

<sup>a</sup> Brocard, in prefat. Locor. T. Sanctæ; Breidanbach (not paged); Roger, 77; Surlius, 353; Mariti, ii. 221; Buckingham, i. 215; Hardy, 123; Monro, ii. 70, 81.

<sup>b</sup> Buckingham, ii. 226; Mariti, ii. 221.

nearly dry when crossed by Irby and Mangles in October, and filled with wild flowers and rushes. Below it these travellers noticed a handsome winding sheet of water, the banks of which were likewise covered with various water-flowers, and many black water-fowl were swimming on its surface. The water is bad, but not salt. It takes its present name from that of a celebrated sheikh whose tomb stands on its northern bank.

Ten miles to the south of this, and about a mile and a half south of Ashdod, we cross a rivulet which appears to be the Scriptural brook Sorek. This identification results from the considerations and bearings which enable us to determine with tolerable accuracy the situation of Eleutheropolis, which Eusebius tells us was on the river Sorek: and the present rivulet is the only one that corresponds with these indications. The stream was crossed by Dr. Richardson (in April) on a broad stone bridge, and it then offered the appearance of the bed of a river with stagnant water in several places.

Between Askelon and Gaza are two small streams, concerning the history or names of which we have no information.

Between two and three miles to the south of Gaza, is a rivulet called Wady Gaza, which seems to answer better than any other to the brook Bezor of Scripture.\* Early in April, Dr. Richardson found it a dry bed, about thirty yards wide. Below where he crossed there was stagnant water in several places; and the route lay through a fine alluvial plain, which when there was water, seemed to be surrounded by the river.

Now, pursuant to the plan we proposed to ourselves, we proceed to notice the streams which tend towards the great valley of the Jordan, beginning with those which flow down the western slopes—that is, from the proper Land of Canaan. These are few, and of small note—the rather that the streams which contribute to the original formation of the Jordan, north of the Lake Houle, have already been noticed. In fact, although between that lake and the end of the Dead Sea there are numerous brooks, each with its own name, there is hardly one among them of even sufficient Scriptural or historical interest to claim the notice to which it would not, from its physical importance be, entitled. The brook Kedron may be an exception; and to that our attention must be confined.

This stream is a mere winter torrent, above six months in the year dry, and deriving its sole importance from the frequent allusions to it in the Sacred History, which necessarily resulted from its flowing through the deepest and most extensive of the natural valleys by which Jerusalem is confined. The ravine in which this stream is collected takes its origin above a mile to the north-east of the city. This ravine deepens as it proceeds, and forms an angle opposite the temple. It then takes a south-east direction, and, passing between the village of Siloam and the city, runs off in the direction of the Dead Sea. It is, as we have said, dry in summer, but even then its wide and stony bed bears witness that in winter, after heavy rains, it becomes a large and powerful torrent. The Kedron continues its way to the Asphaltic Lake through a singularly wild ravine, the course of which few travellers have traced. Of these are Madden and Stephens, who both passed through it, the one in going to and the other in coming from the Dead Sea. It is in this ravine that the celebrated monastery of Santa Saba is situated, of which we have already taken notice. Speaking of his approach to this monastery through this ravine, Mr. Madden says, "After traversing for the last hour a wild ravine formed by two rugged perpendicular mountains, the sides of which contained innumerable caverns, which once formed a sort of troglodyte city in which the early Christians resided, the tradition of this convent is, that 80,000 of them were massacred in this valley by the Saracens. The sight of the convent in this desolate place was like a glimpse of paradise." Leaving it next day, he gives no informing particulars of his farther route, save that he "marched through the bed of the Kedron, along the horrible ravine which he entered the day before." At length he says, he got into the plain, his course over which led him to the top of the cliffs which bound the lake on the north-west. But he takes no further notice of

\* See 2 Sam. and p. 460 of the present History.

the bed of the Kedron, which, it appears, approaches the lake in that quarter, where the mountains are very high and precipitous.

We will not quit the brook Kedron without some notice of the other waters of Jerusalem which its bed receives. And first of the "Fountain" and the "Pool of Siloam," whose surplus waters flow in a petty streamlet to that bed. Concerning these there has been some confusion through the indiscriminate application of names by different travellers, and the most lucid account we have met with is that with which the public has lately been furnished by Mr. Wilde.<sup>a</sup>

"The Fountain of Siloam, sometimes called the Upper Pool of Siloam, is situated in an indentation formed in the side of the hill, beneath the south-eastern angle of the city wall, and nearly opposite the place where the Tyropœan Valley separates the eastern sides of Mounts Zion and Moriah. It is entered by an arched vault by which a flight of steps leads down to a low-vaulted passage cut in the solid rock, and which leads in a north-west direction beneath the site of the ancient temple. The often repeated, and, I might say, the hacknied quotation,

"Siloa's brook that flow'd  
Fast by the Oracle of God,"

has never, I think, been properly understood, because both this fountain and that called the pool of the same name, are placed at a distance from the site of the temple. The following fact may illustrate and explain this quotation:—

During the rebellion that I have already alluded to,<sup>b</sup> the Arabs of the opposite village (Siloam) gained access to the city by means of the conduit of this pool, which again rises to the surface within the mosque of Omar. Dr. Richardson *conjectured* that this subterraneous passage proceeded under the mountain, but heretofore no proof could be given of its doing so, nor was it known to travellers<sup>c</sup> that it communicated with the interior of the city. The passage is evidently the work of art. The water in it is generally about two feet deep, and a man may go through it in a stooping position." Mr. Wilde further supposes that this may have been used by the ancient inhabitants as a sallyport, or secret outlet from the temple; for he states that it cannot have been made to conduct the water from the fountain *into* the city, inasmuch as it is lower than that point, and the stream flows *down* from it. If this be the case, it seems to us infinitely more likely that it was originally designed to carry off the surplus water which was brought from the fountain of Etham into the temple. Those who wish to pursue the inquiry will find much to confirm this conjecture. Mr. Wilde informs us that the fountain of Siloam is "a mineral spring, of a brackish taste, and somewhat of the smell of Harrowgate water, but in a very slight degree."<sup>d</sup> It is said to possess considerable medicinal properties, and is much frequented by pilgrims. The remains of a church surround the vault at the top, and by the Latin fathers (and all Roman Catholic travellers) it is called the Fountain of the Blessed Virgin, from the supposition that she washed the linen of our Lord<sup>e</sup> in its sacred waters.

"Continuing our course around the probable line of the ancient walls, along the gentle slope of Zion, we pass by the king's gardens, and arrive at the lower pool of Siloam placed in another indentation of the wall, at the southern extremity of Zion. It is a deep square cistern, lined with masonry, adorned with columns at the sides, and having a flight of steps leading to

<sup>a</sup> 'Narrative of a Voyage to Madeira, Teneriffe, and along the shores of the Mediterranean,' &c. By W. R. Wilde, M.R.I.A. Dublin, 1840.

<sup>b</sup> This was an outbreak in Jerusalem, in which the Arabs inhabiting the village of Siloam were the ringleaders.

<sup>c</sup> Perhaps not to modern travellers; but Mr. W. might read Quaresmius, lib. iv. pereg. vii. cap. 28 ('*De fonte B. Mariæ Virginis*'). In the two preceding chapters, respecting the lower pool (*De Origine et Terminatione Fontis Siloæ*), some valuable matter, new because old, might also be found.

<sup>d</sup> "I brought home a jar of this water, and am informed by Professor Kane, who has analysed it, that it is a strongly saline and sulphureous spring, whose specific gravity is 1003·5; that it contains much common salt, some carbonate and sulphate of lime, a trace of muriate of magnesia, together with a quantity of sulphuretted hydrogen gas."—This seems rather a loose way of stating the results of an analysis.

<sup>e</sup> "And her own," Nau reports, but with his usual good sense adds to his report of the tradition, "C'est ce qu'on en dit, mais je ne sçay pas, d'où on l'a appris." In his time the fountain was highly revered (as it still is) by the Moslems, and Christians were obliged to pay for permission to descend, and Jews were altogether excluded.

the bottom in which there were about two feet of water. It communicates by a subterraneous passage with the fountain just described, from which it is distant about six hundred yards.



[Pool of Siloam.]

The water enters the pool by a low-arched passage, into which the pilgrims, numbers of whom are generally to be found around it, put their heads as part of the ceremony, and wash their clothes in the purifying stream that issues from it.

“ A very remarkable circumstance is related of this pool and fountain :—It is reported that the water in them is subject to a daily tide ; and by some writers it is stated to ebb and flow under lunar influence. I must confess that in my first visits to the place, I was much astonished, for not only did I see the mark to which the recently-fallen water had risen, but I also perceived that its height was greater at different times of the same day. Many ingenious hypotheses, and many learned arguments have been adduced to account for this extraordinary phenomenon—the wonder and admiration of the pilgrim and traveller. I think, however, that it may thus be accounted for. The stream or outlet from the lower pool is conducted by artificial channels through the gardens and parterres that lie immediately beneath it in the valley ; and it is the chief source of their fertility ; for as they are mostly formed of earth which has been carried from other places, they possess no original or natural soil capable of supporting vegetation. Now, immediately on the water-course leaving the pool, it is divided into numbers of little aqueducts for the purpose of irrigating these different plots : but as there is but little water in the pool during the dry season, the Arabs dam up the several streams, in order to collect a sufficient quantity in small ponds adjoining each garden ; and this they must all do at the same time, or there would be an unfair division of the fertilising fluid. These dams are generally made in the evening, and the water is drawn off in the morning, or sometimes two or three times a-day ; and thus the reflux of the water that they hold gives the appearance of an ebb and flow.

“ The surplus water is finally collected into a small stream that joins the brook Gibon, near its junction with the Kedron, but both these latter streams were dry during our visit.”

This lower pool of Siloam has been generally regarded as that in which, by our Saviour's direction, the man born blind went and washed, and returned with the blessing of sight. (John ix. 7.) It has also been identified with the Ain Rogel, or Fuller's Fountain (literally Foot Fountain), mentioned in Josh. xv. 7; xviii. 16, and 2 Sam. xvii. 17; and this with more likelihood than the reference which some others make to the upper fountain. But the point is uncertain, and not of much importance. Nau points to a fountain below the village of Siloam, on the other side of the valley, which he thinks agrees more than either of them with the Scriptural intimations which refer to Ain Rogel. It was from the *fountain* as distinguished from the *pool* of Siloam<sup>a</sup> that the Jews were wont to draw water in a golden vessel, at the feast of tabernacles, and bear it with great ceremony to the temple, where it was poured out as a libation at the altar.<sup>b</sup>

The stream of Gihon, mentioned as falling into the Kedron at the angle where the eastern and southern valleys meet, is connected with one, or rather two, of the numerous reservoirs prepared by the early sovereigns of Judah for supplying Jerusalem with water. The reservoirs now in question are in the western valley, called the Valley of Gihon, whence they are named the Upper and Lower Pools of Gihon. The "Upper," being the northernmost, is nearly opposite the gate of Bethlehem, and the road to Jaffa passes close by it. It is a large basin, not as Pococke describes, "cut down about ten feet into the rock," but by running a strong wall across the ravine, walling the sides and covering them with a water-proof cement. As travellers note that it is always dry or almost dry, except in or after the season of rain, it seems designed to receive the waters which come down from the neighbouring hills. From this pool to the city there is a canal, which is uncovered part of the way, and which is said to go to the pool which is inside the Bethlehem gate, in the street near the Holy Sepulchre. This canal was obviously intended to conduct a portion of the surplus waters from the outer pool to that within the city; for the design of all the pools appears to have been to collect the rain-water for the common uses of the city, and even for drink in case of need.

About a mile<sup>c</sup> below this, in the valley, below Mount Zion, is another much larger reservoir, designed apparently not only to collect the intermediate waters of the valley, but to share the surplus water of the upper pool. It is made like the other by building a wall across the valley. The basin is about 250 paces long by 100 broad; and the bottom is very narrow, as the sides shelve downward like steps. The basin is supplied by no natural springs, and is now dry except after rains. The surplus water from this pool, as well as that collected below it, passes off by the southern valley and falls into the Kedron. Tradition ascribes the credit of these pools to Solomon, as it does all similar works in the land. But it seems better to regard this lower pool at least as the work of Hezekiah, who is said to have "stopped the upper water-course of Gihon, and brought it straight down to the west side of the city of David;" which seems correctly to describe the situation of the lower pool, and the mode of its formation. The *upper* pool, and the communication between it and the city may have previously existed; and it appears to have been in or near the spot that Solomon was anointed king by order of his father, while Adonijah was holding his royal feast at Ain Rogel, in the opposite valley.<sup>d</sup> The pool is not named, and indeed perhaps did not *then* exist. And the name Gihon, which alone is given, may have denoted a natural spring, or a well, for that it was a *water*, seems to be shown by the fact of the intended opposition to Adonijah, who was at *the well* of Rogel.

There are few towns, and scarcely any metropolitan town, in which the natural supply of water is so inadequate as in Jerusalem; hence the elaborate contrivances to collect and preserve the precious fluid, or to bring it to the town. And as we shall find no more suitable

<sup>a</sup> This is shown by Lightfoot from the Jewish writers. See Chorog. Cent. chap. xiv.

<sup>b</sup> The Jewish writers suppose the passage, "With joy ye shall draw water out of the wells of salvation" (Isa. xii. 3), to refer to this custom. And with more likelihood, seeing the *time* is distinctly indicated, it is supposed that Christ was actually witnessing this ceremony, when "On the last day, that great day of the feast [of tabernacles], Jesus stood and cried, saying, 'If any man thirst, let him come to me and drink.'" &c.

<sup>c</sup> Course distance; the direct distance is little more than half this.

<sup>d</sup> 1 Kings i. 33.



place than the present, we here take such notice of the works undertaken with this view, as its historical importance seems to require.

Of the reservoirs within the town, the only one which need engage our attention is that which is identified as the Scriptural pool of Bethesda, as a description of which we cannot do better than transcribe the account recently given by Mr. Wilde :—

“The place called Bethesda is an immense deep oblong excavation or cistern, somewhat similar to the pools of Solomon near Bethlehem. It is situated to the south of St Stephen’s or the sheep-gate, immediately beneath the wall of Omar’s mosque, and beside the antique cyclopean masonry that I noticed before in this locality. It is about two hundred and fifty feet long and thirty feet deep; but now dry, and partly filled with dirt, rubbish, and brambles. The walls that form its sides are so curiously constructed that they demand attention. They are of immense thickness, and formed of several upright layers of masonry. The first, or that most distant from the inner side of the pool, is formed of large and perfectly square masses of stone laid in courses, but separated from each other by a band of intervening smaller stones in the shape of long bricks, placed with their ends out, and projecting from six to eight inches beyond the plane of the larger ones; so that they thus formed a kind of reticulated work. The square space left in the centre of each band of projecting stones is again filled up by others still smaller; and the central stone of this part is fitted into a square groove or notch cut about three or four inches deep in the original large blocks with the greatest nicety, and the whole joined together by strong cement. Over this is placed a firm coating of mortar, a couple of inches thick, and studded on its surface with small flat flints, and bits of marble; and last of all, it was completely covered with a layer of strong cement of a whitish colour. The walls have been much dilapidated in several places, and I had an opportunity of examining them carefully. This work is best seen on the southern side of the excavation, where it lies beneath some ruined houses. In the western end the remains of three arches are still in existence; but the third is at present nearly choked up with the *debris* of old and ruined houses. These arches appear to have been formed as an entrance for the water, which was probably conveyed to them from the Bethlehem aqueduct.”

The *site* of the famous “Pools of Solomon,” on the road to Bethlehem has been noticed in p. cxxiv., and on account of their connection by aqueducts with Jerusalem, the *pools* themselves cannot be more suitably noticed than in this place.

It will be remembered that the narrow and fertile valley in which they are found is supposed to be the site of one of the undertakings of Solomon, of which he speaks in Eccles. ii. 5. 6.,<sup>a</sup> and to be that in particular, to which there are allusions in the Canticles. It is also, with reason, conceived to be the place noticed by Josephus, who, when writing of Solomon, states :— “There was about fifty furlongs distant from Jerusalem, a certain place called Etham, very pleasant in fine gardens, and abounding in rivulets of water; thither he was wont to go forth in the morning, sitting on high in his chariot.”<sup>b</sup>

The description of these pools which Mr. Wilde has furnished is so distinct and fresh, that we shall here introduce it :—

“At the extremity of the valley, we arrived at the three enormous tanks, sunk in the side of a sloping ground, and which, from time immemorial, have been considered to be the workmanship of Solomon; and certainly they are well worthy the man to whom tradition has assigned their construction. These reservoirs are each upon a distinct level, one above the other, and are capable of holding an immense body of water. They are so constructed, both by conduits leading directly from one to another, and by what may be termed *anastomosing* branches, that when the water in the upper one has reached to a certain height, the surplus flows off into the one below it, and so on into the third. These passages were obstructed and

<sup>a</sup> “I made me gardens and orchards, and I planted trees in them of all kinds of fruits; I made me *pools of water*, to water therewith the wood that bringeth forth trees.”

<sup>b</sup> Antiq. viii. 7.

the whole of the cisterns were out of repair, when we visited them, so that there was hardly any water in the lowest, while the upper one was nearly full of good pure water. Small



[Pools of Solomon.]

aqueducts lead from each of these cisterns to a main one that conducts the water to Jerusalem. They are all lined with a thick layer of hard whitish cement, and a flight of steps leads to the bottom of each, similar to some of those in the holy city. Where the lowest cistern joins the valley of Etham, it is formed by an embankment of earth, and has a sluice to draw off the water occasionally. A short distance from the upper pool, I descended into a narrow stone chamber, through which the water passes from the neighbouring spring on its course to the cisterns. This likewise has a traditionary tale to tell. It is said to be the sealed fountain to which allusion is made in the fourth and fifth chapter of the Canticles. From an examination of this place, it appeared to me that several springs empty themselves into these reservoirs, which are partly cut out of the solid rock, and partly built with masonry.

“ Nigh to the upper pool there is a large square castle, apparently of an order of architecture belonging to the Christian era ; and, in all probability, so placed to guard these water-works during the period of the Holy War, for we know to what extremities some of the early Crusaders were reduced from the different wells being poisoned by the enemy upon their approach to Jerusalem.

“ These fountains having been already described by Maundrell, Pococke, and others, I shall not dwell longer upon them, except to mention two circumstances, that it appears extraordinary have not been adverted to by former travellers ; the first is, their great similarity to the fountains assigned to Solomon at Ras-el-Ain, near Tyre ;<sup>a</sup> and the fact of both being

<sup>a</sup> “ We visited the cisterns of Solomon, at Ras-el-Ain, which, tradition says, he erected in return for the assistance afforded by King Hiram in building the temple. There are two sets of these cisterns ; the first we came to were small, and in ruins, and one evidently of a later date than the second. Their decayed state allowed us to examine the mode in which they were constructed, in order to raise the body of water to the required level. This water now finds its way direct to the sea, turning a mill in its course. No doubt can exist, I think, but that both these and the larger ones are natural springs, which, by being enclosed in those water-proof walls, raised the water to the height necessary for conducting it to the city. To suppose them, as has been asserted, supplied by a river having a higher source in the adjacent mountains is unreasonable ; for had such been the case, why not conduct it from the highest point at once, instead of bringing it into a valley, in which both of these cisterns are situated ? The larger cisterns are about half a mile farther on to the south ; the ground which intervenes between them and the lesser ones is highly fertile, and was covered with green corn and large groves of mulberry-trees—silk still forming a considerable article of

natural springs, that were pent up so as to raise the water they contained to the level of its final destination. The second is, that these springs were originally collected into one stream, which must then have formed a considerable rivulet, and running through this valley, finally discharged its waters into the Asphaltine Lake.

"It was beside these water-works that Ibrahim Pascha suffered a defeat by the Arabs some years ago, when he made a sudden *sortie* from Jerusalem and attacked the rebels there, but their numbers more than doubled his. A garrison of five cavalry soldiers were stationed in the old castle.

"On our return to the city, we followed the track of the aqueduct as far as Bethlehem, and afterwards crossed it in several places on the road. It is very small, but the water runs in with considerable rapidity, as we could perceive by the open places left in it here and there. From the very tortuous course that this conduit takes in following the different sinuosities of the ground, being sometimes above and sometimes beneath the surface, it is difficult to persuade one's self that it does not run up hill, as many have supposed. Finally, it crosses over the valley of Rephaim, on a series of arches to the north of the lower pool of Gihon, and winding round the southern horn of Zion, is lost to view in the ruins of the city. It very probably supplied the pool of Bethesda, after having traversed a course of certainly not less than from thirteen to fifteen miles."

We now turn our attention to the rivers which fall into the basin of the Jordan from the country east of that river, beginning in the north.

The first of these is the river JARMUCH, a name which the Greeks softened into Hieromax, and which is now called by the Arabs Sheirat-el-Mandhour, from a celebrated chief named Mandhour, who is said once to have governed the whole of the tract of country through which the stream runs, from its source at Mezareib to its outlet into the Jordan, near the southern extremity of the lake of Tiberias. At the place—the supposed site of Ashtaroth Carnaim—to which the source of the river is thus ascribed, the stream issues from a lake about a mile in circumference. This lake has a small grass covered islet in the centre, and an abundance of fish in its waters, equal in size and not inferior in beauty to the gold-and-silver fishes which we keep in glass globes. The water is sweet and transparent, and the lake never dries. The stream which issues from hence flows in a westerly direction, with few windings, till it empties itself, at the point already indicated, into the Jordan, which is considered to be fifteen hours distant from the lake in a W.S.W. direction. On another occasion, Mr. Buckingham, to whom we owe our information, heard the source of the river described as being three days' journey from its mouth, in the direction of Bozra, at a place called Shellal; but whether

commerce here. These fountains are three in number, and one about thirty feet high; they are situated in a small valley, about a quarter of a mile from the sea; and though they are much broken and neglected, yet they retain sufficient magnificence to attest their antiquity and former beauty. The largest is an octagon, and is about a hundred yards nearer to the sea than the others, to which it is joined by some very beautiful arches. A row of steps leads to the top, which is surrounded by a walk eight feet broad. Either it was originally arched over, or the lining is much worn away, as the top projects like a cornice. The aperture is twenty-two yards across, and on fathoming it, I found the depth not more than eleven yards in the centre, and about two at the edges; but its depth has probably been diminished by rubbish, &c., which from time to time it must have received. Indeed, one only wonders how these cisterns have at all stood amidst the many desolations that have visited this unhappy country. They are always full, and an immense body of water flows from them, which also turns several mills in its course, as shown in the map.

"I measured the thickness of the wall of the smallest fountain, and found it to be twenty-three feet. It was formed in this way—two walls of hewn stones, each from five to six feet long, enclosed a space which was filled up with a cement, consisting of lime, broken stones, and gravel. On the inner wall was a lining of mortar, studded with small stones, similar to that on the fountains of Solomon, near Bethlehem, and to that on the pool of Bethesda, at Jerusalem.

"The water has been drawn from the aqueduct to supply the mills, and Ibrahim Basha was then erecting a Tabouch manufactory nigh to the cisterns. Besides the large quantity of water constantly passing off in the regular stream, it flows over the side of the cistern in one place, and forms a handsome cascade. Stalactites, like those on the arches in the plain, are seen here in immense masses, and some Doric capitals have been lately dug up at this place; and an aqueduct runs from it in a southward direction, which was used probably for the purposes of irrigation. The main aqueduct is continued northward to the rock, or citadel, and is supported by arches at one place only. On the morning of our visit, some Arab women were baking their bread, made by pouring batter upon the heated pan, a practice much referred to in the Book of Samuel. The existence of these fountains prior to the time of Alexander has been called in question by a learned writer; but no stronger proof is needed of their having been constructed previous to the building of Insular Tyre than that which is furnished by the aqueduct running direct to the rock, and afterwards turning back towards the island, to which it could have been brought in half the distance, and with much less obstruction, from the irregularities of the ground. Beyond these fountains is an extensive plain, bounded by the lower range of Lebanon."

implying thereby a cataract or rapids, as that word does on the Nile, he could not clearly understand. The fact is that the various streams which contribute to form the river Jarmuch sweep a wide tract of country to the east and north-east of its estuary; and as many of these have a far more remote source than that which comes from the lake at Mezareib, it is difficult to understand why this should preferably be considered the source of the river, unless that it is the most remarkable and the best known. It is likely, however, although we have no assurance of it, that these remoter streams are dry in the summer, and that the only perennial stream is that which issues from the lake, in which case its claim to be regarded as the source of the river may be admitted. But nothing is in general more difficult than to assign their true sources to rivers obscurely known: and as it is a matter of little interest, except to scientific inquirers, it is only under peculiar circumstances that we have allowed it to engage our attention.

The body of water which the river Jarmuch contributes to the Jordan is very considerable. Indeed, at the point (a little above the estuary) where it was crossed by Mr. Buckingham, early in February, he found it not fordable without difficulty, as the stream was there broader, deeper and more rapid, than the Jordan at the time (a fortnight before) and place of his crossing that river, above Jericho.<sup>a</sup>

The river JABBOK now bears the name of Zerka. Its waters first collect in the south of Jebel Haouran. In crossing westward, across the dry plain, to enter the Belka, it more than once takes its course under ground, and is quite dry in the summer; but after it has passed the plain, the contributions it receives make it a perennial stream, although in summer much attenuated. At the point where it enters the hilly region is the Kalaut-ez-Zerka, or castle of Zerka, which is one of the stations of the Syrian pilgrims' caravan. At this place "it is but a sorry rivulet embedded among reeds, but its waters are clear and well tasted."<sup>b</sup> At a point about midway between this place and the mouth of the river, where it was crossed by Buckingham, its course lies between tall and abrupt cliffs, about 500 feet high, which look as if separated by some convulsion of nature to give it passage. It is in fact a deep ravine in a plain, the dark sides of which are in general destitute of verdure, while the plain at the top, on both sides, is covered with a light red soil, and bears marks of high fertility. At the bottom of the ravine we find a small river flowing from the eastward, and which appears here to have just made a sharp bend from the northward, and from this point to go nearly west to discharge itself into the Jordan. "The banks of the stream were so thickly wooded with oleander and plane-trees, wild-olives, and wild-almonds in blossom, pink and white sickleymans-flowers, and others, the names of which were unknown to us, with tall and waving reeds, at least fifteen feet in height, that we could not perceive the waters through them from above, though the presence of these luxuriant borders marked the windings of its course, and the murmur of its flow was echoed through its long deep channel, so as to be heard distinctly from afar. On this [the northern] side of the stream, at the spot where we forded it, is a piece of wall, solidly built upon the inclined slope, constructed in an uniform manner, though of small stones, and apparently finished at the end which was toward the river, so that it never could have been carried across, as we at first supposed, either for a bridge or to close the pass. This was called by the Arabs, *Shughl beni-Israel*, or the work of the sons of Israel; but they knew of no other traditions regarding it. The river where we crossed it, at this point, was not more than ten yards wide, but it was deeper than the Jordan and nearly as rapid, so that we had some difficulty in fording it. As it ran in a rocky bed, its waters were clear, and we found their taste agreeable."<sup>c</sup>

We know not that the river has been crossed lower down than this by any traveller besides Burckhardt, from whose brief indication it appears still to flow in a deep valley, through banks overgrown with the *solanum furiosum*. As might be expected in the beginning of July, he found it "a small river;" but must, even on his own showing, be under some mis-

<sup>a</sup> Buckingham's 'Arab Tribes,' 163; 'Palestine,' ii. 297, 306.

<sup>b</sup> Robinson, ii. 171. This was in November.

<sup>c</sup> Buckingham's 'Palestine,' ii. 109; see also Lindsay, ii. 123.

take in saying that it "empties itself into the Jordan about an hour and a half from the spot where it issues from the mountain."<sup>a</sup>

The ARNON, which, after the Jordan, is more frequently than any other river of the land named in the historical and prophetic Scriptures, now bears the name of *Wady Modjeb*, was pre-eminently the river of Moab, on which Aroer, one of the principal cities of that nation, was situated. It enters the Dead Sea, and is principally formed by the confluence of three streams (*Wady Wale*, *Bahr Ledjoun*, and *Seyle Sayde*), all of which have their origin in the remoter hills, beyond that lake, which overlook the eastern wilderness. Burckhardt crossed it in July, about twenty miles from its mouth. It has been more rarely visited than the other streams; and the account rendered by Burckhardt is still the only good one we possess. It seems to exhibit many of the same characteristics as the *Jabbok*.

"The view which the *Modjeb* presents is very striking. From the bottom, where the river runs through a narrow strip of verdant level, about forty yards across, the steep and barren banks rise to a great height, covered with immense blocks of stone which have rolled down from the upper strata, so that when viewed from above, the valley looks like a deep chasm, formed by some tremendous convulsion of the earth, into which there seems no possibility of descending to the bottom. The distance from the edge of one precipice to that of the opposite one is about two miles in a straight line. We descended the northern bank of the *Wady* by a footpath which winds among the broken masses of rock, dismounting on account of the steepness of road. . . . There are three fords across the *Modjeb*, of which we took that the most frequented. I had never felt such suffocating heat as I experienced in this valley, from the concentrated rays of the sun and their reflection from the rocks. We were thirty-five minutes in reaching the bottom. The river, which flows in a rocky bed, was almost dried up (in July); but its bed bears evident marks of its impetuosity during the rainy season; the shattered fragments of large pieces of rock which had been broken from the banks nearest the river, and carried along by the torrent being deposited at a considerable height above the present channel of the stream. A few defle and willow-trees grow on its banks."<sup>b</sup>

Of the smaller lakes, or rather pools, to be found in the country, some have been incidentally noticed, and the rest are of too little consequence to require notice in this work. Mr. *Monro* indeed mentions that on approaching the plain of *Esdraelon*, near the hill on which stands the castle of *Sanhoor*,<sup>c</sup> he saw "a lake about six miles long by three in width, which had been formed within a short time, from some unknown cause. The tract of land over which it had spread was arable, and in many places the tops of the corn were visible above the water. The muleteers, though in the habit of travelling upon that route, had never seen it before, and one of them could not be persuaded that it was water, until he had approached close to the brink, but believed it to be the illusion of the *mirage*, which having seen in the desert, he supposed might exist there also." Lest the lake thus described should find a place in maps, we may mention that it has been noticed by no subsequent traveller who has pursued the same route; and that the appearance witnessed was probably no other than a temporary inundation, caused by recent heavy rains, which the heat of the ensuing summer soon evaporated. Large tracts in and bordering on the plain of *Esdraelon*, as well as on the plain of the coast are thus laid under water in the wet season.

<sup>a</sup> Burckhardt, 347.

<sup>b</sup> Burckhardt, 372-3.

<sup>c</sup> See before, p. cxvii.

## SUPPLEMENTARY NOTES.

(<sup>1</sup>) THE NAME OF THE JORDAN, p. clviii.—Various have been the etymologies assigned to the name of this river. It happened that a party of the tribe of Dan established themselves near one of the apparent sources of the Jordan, and gave the name of Dan to the conquered town of Laish. Hence the etymologists have rarely been able to get rid of the notion that the last member of the name *Jordan* must be in some way referred to the tribe of *Dan*. The explanation which ascribes the name to the union of two streams, respectively called *Jor* and *Dan*, to form the river and the name of *Jordan*, is so pretty that it deserves to be correct. This explanation, as applied, assumes that of these two streams the *Dan* was that which arose near the city of that name; but the only *fact* bearing on this point which we have been able to find (adduced in the text) would rather ascribe the name of *Jor* to *this* stream, and of *Dan* to *the other*. But as the tribe of *Dan* certainly occupied the territory in which *both* streams rise, this fact would not disprove the etymology, as the name *might* be derived from the tribe if not from the town. Besides, the two sources thus denominated are so near each other, as to make the distinction of little importance, since both must have been near the city of *Dan*.

Another etymology, however, derives the name from the words *יָרַד*, *yor*, and *דָּן*, *dan*, that is, *the river Dan*, the former being an Egyptian word adopted by the Hebrews to denote a river or brook, and especially the Nile and its branches. Of those who adopt this interpretation, some have the *דָּן* as a proper name, supposing it derived from the tribe of *Dan*; while others regard it as an appellative, and finding that *Dan* may mean *pleasure*, translate the name, *River of pleasure*. But the word may also mean *deep*, *profound*; and hence others will have the name to signify *the deep river*, a distinction sufficiently applicable to it, by a comparative reference to the other rivers of the country.

But another class of interpreters, observing that the river is called *Jordan* long before the tribe of *Dan*, or even the founder of that tribe existed, and feeling an objection to the supposition that in the Book of Genesis this name is proleptically assigned to the river, think it the better course to derive the name from the word *יָרַד*, *jarad*, "to flow down," that is, "swiftly," and suppose the river to have been

thus named with reference to the rapidity of its course.

Our own opinion is, that the second member of the name *dan*, does not at all refer to the tribe of that name; for, of all things, rivers most usually retain the names they originally received, and it was not likely that the Hebrews, so late as the time of the judges, gave a new name to a principal river which must have had a well-known and recognised name for ages. We therefore believe that *Jordan* was its actual name in the time of Abraham. But although inclining to the interpretation which derives the name from the verb *יָרַד*, we do not feel quite decided against those other interpretations which equally exclude the reference to the word *dan* as a proper name. Indeed, it might be strongly argued in favour of the *Jor* being understood in the sense of *river*, that the phrase "*the river Jordan*" never occurs in the Bible—it is always "*the Jordan*." But it may be added that the corresponding word *ܝܘܪܕܢ* occurs in Syriac in the sense of *a sea, a water*. Thus in excluding all reference to the tribe of *Dan*, we are far from being at any loss for an etymology of the word *Jordan*.

(<sup>2</sup>) THE STADE, p. clxi.—We shall be unable in this place to develop our views on this subject to the extent we once intended. The remarks we may offer may be well introduced by the following, from the Introduction to Major Rennel's 'Comparative Geography of Western Asia.'

"Of these (stades) there were both Greek and Roman. It was originally a Grecian measure; but afterwards applied by the Romans to the sub-division of their mile, which consisted of eight stades. Hence a degree consisted of 600 Roman stades only; although Strabo, following the Greeks, reckoned 700, and the mean of the different authorities among the Greeks 718; in the Euxine, taken around its whole circuit, about 708. These are the Grecian *itinerary* stades, and had no reference to the Olympic, which never appears to have been used for itinerary purposes.

"When Polybius, Strabo, or Pliny are speaking after the Greeks, or treating of Grecian matters, antecedent to their times, they always used the Grecian *itinerary* stade; but in what concerns Roman matters alone, the Roman *stade*. Strabo, when following the route of

Alexander, gives of course the identical *number* of stades, as well as the *quality*, which he found in the annals of the times; and, moreover, gives the distance according to the number of stades *actually marched over*; so that, after all, it was necessary, in order to obtain the direct distance, to deduct the proportion of *winding* of the road.

"Pliny gives those distances almost universally in Roman miles, in order, it may be supposed, to render the account more intelligible to his countrymen. It will be found that he turned the sums of Grecian stades into *m p.* by dividing by eight, which has the effect of increasing the distance, since it required nine and a half Grecian stades to make a Roman mile. However, this will be found to be true, by those who compare the distances in *m p.* in Pliny, with the stades in Strabo."

Now this process is, we believe, that which has been applied with exaggerated effect to the measurements of Josephus; so that his dimensions and distances, as reported to the English reader, are much larger than he intended them to be. Such mere Roman writers as Pliny, found it convenient to consider the Grecian stade equivalent to the eighth part of their mile, or their furlong, although nine and a half stades would be strictly required for that mile; and our own writers, imitating in this the Romans, have translated the *stade* into *furlong* with still worse effect, seeing that our mile is so much longer than the Roman (which had seventy-five miles to the degree, whereas ours has sixty-nine and a half) that about ten and a quarter stades would be required to fill it out. The disproportion between the stade and the English "furlong," into which it is so usually rendered, will appear still greater when it is reflected that distances were usually stated by the ancients according to the road, although an English reader is apt to think of direct distances. The difference thus resulting is such, that it is considered the Roman mile of seventy-five to a degree becomes eighty-four to the degree, when allowance is made for the windings of the roads, to use the measurement in geographical construction.

Now we consider, that, when all these circumstances are taken into account, and applied to interpret the measures of Josephus, it will be found in most instances remarkably accurate, instead of being too large, as is usually considered. We have no doubt that, writing in Greek, and of affairs in which the Romans were only ultimately and partially concerned, his stade was the same as that of the Greek writers, and, as above, of Polybius, Strabo, and Pliny, when speaking after the Greeks, or of Grecian affairs, and that, consequently, instead of rendering his *stade* into *furlong*, of which we

have eight to our mile, we should consider that there were at least *ten* of his stades to our mile. The propriety of *thus* reducing his measurements into British miles is shown by the frequently very exact correspondence between them, as thus understood, and those which some modern travellers have furnished. We are content to have pointed out a subject of inquiry which to some of our readers may be interesting.

In the ninth volume of the 'Geographical Journal' there is a paper 'On the Stade, as a Linear Measure,' by Colonel Leake. It contains a large mass of valuable information on the subject; but we have not ourselves resorted to it, as the conclusion of Major Rennel and other great geographers is more satisfactory to us than that which would bring the stade to a uniform standard.

(\*) WATER OF THE DEAD SEA, p. clxxxi.—We cannot forbear subjoining in a note the lively account which Mr. Stephens gives of his experience on this point:—

"From my own experience I can almost corroborate the most extravagant accounts of the ancients. I know, in reference to my own specific gravity, that in the Atlantic and Mediterranean I cannot float without some little movement of the hands, and even then my body is almost totally submerged; but here, when I threw myself upon my back, my body was half out of the water. It was an exertion even for my lank Arabs to keep themselves under. When I struck out in swimming it was extremely awkward, for my legs were continually rising to the surface, and even above the water. I could have lain and read there with perfect ease. In fact I could have slept; and it would have been a much easier bed than the bushes at Jericho. It was ludicrous to see one of the horses: as soon as his body touched the water, he was afloat, and turned over on his side: he struggled with all his force to preserve his equilibrium; but the moment he ceased moving, he turned over on his side again, and almost on his back, kicking his feet out of water and snorting with terror. The worst of my bath was, after it was over, my skin was covered with a thick glutinous substance, which it required another ablution to get rid of; and after I had wiped myself dry, my body burnt and smarted as if it had been turned round before a roasting fire. My face and ears were incrustated with salt; my hairs stood out, 'each particular hair on end,' and my eyes were irritated and inflamed, so that I felt the effects of it for several days. In spite of all this, however, revived and refreshed by my bath, I mounted my horse a new man."

## CHAPTER VII.

### HISTORY OF THE MONTHS.



[Terrace Cultivation.]

It has been a matter of anxious consideration in what form we might best and most compendiously exhibit a vast body of information, which we have collected from a great variety of sources, respecting the climate, the seasons, the products, and the agricultural operations of Palestine. In the form of a HISTORY OF THE MONTHS, it has appeared to us that the largest quantity of information on all these subjects might be brought into the smallest space; while in that form, such information can perhaps be made more interesting to the general reader than in any other.

Something of this kind has been very ably executed by J. G. Buhle and G. F. Walch, both in the year 1785, as competing prize essays, proposed by the learned Michaelis as professor at the university of Gottingen, in November, 1784. The prize was awarded to Buhle; but the merits of the two essays were so nearly equal, that Walch only lost it through some inattention to one of the rules which had been laid down for the guidance of the competitors; and its value was so highly estimated by Michaelis, that it was published under his auspices and with a highly commendatory preface from his pen.<sup>a</sup> The essay by Buhle is well known in

<sup>a</sup> G. F. Walchii Calendarium Palestine Economicum, cum pref. J. D. Michaelis, Gotting. 1785.



this country. It was originally translated by Charles Taylor, and inserted among the 'Fragments' appended to his edition of Calmet, under the title of 'An Economical Calendar of Palestine,' and, in various forms of abridgment, it has since formed the basis of the various 'Calendars' which have been offered to the English public. The other, by Walch, has not been translated, and is now but little known. In the present chapter we shall incorporate with our own ample materials whatever seems really valuable in the collections formed by *both* Buhle and Walch. Much information which existed in their time was overlooked by both these learned writers; and a large quantity of valuable matter has accrued since they wrote. All this has been open to us, and has been carefully digested in the present chapter, which we have anxiously endeavoured to render a valuable analysis of *all* existing information on the subjects on which it treats. To increase, as we think, its interest, and the instruction we wish it to convey, we have used the Bible itself as a source of information, and have introduced descriptions of the agricultural operations which belong to the several months. It has been judged expedient to adduce the authority for every detail which is offered, even at the risk of giving to the page a more repulsive aspect than it might otherwise bear.

Before entering upon this, it will, however, seem necessary to furnish the reader with such a general statement respecting the *climate* of Palestine, as may render more clear and satisfactory the observations which will be recorded under the several months. The reader must also be thus prepared to allow for the very remarkable differences of climate in Syria, and particularly in Palestine; as, without a clear understanding on this point, every separate statement may give rise to serious misconceptions. For these purposes the general statement furnished by Volney is the best that can be supplied, and we therefore adopt it, with some abridgment, addition, and correction, for such a preliminary view as we require.

"It is an opinion pretty generally received that Syria is a very hot country, but it will be necessary to make several distinctions; first, on account of the difference of latitude, which, from one extremity to the other, is not less than six degrees; secondly, from the natural division of the country into low and flat, and high and mountainous, which division occasions a still more sensible difference; for while Reaumur's thermometer stands at twenty-five and twenty-six degrees upon the coast, it hardly rises to twenty or twenty-one among the mountains.\* In winter, therefore, the whole chain of mountains is covered with snow, while the lower country is generally free from it, or at least it lies only for a short time. We must first then establish two general climates; the one very hot, which is that of the coast, and the interior plains, such as those of Baalbec, Antioch, Tripoli, Acre, Gaza, Haouran, &c.; the other temperate, and almost like our own, which is the climate of the mountains, at least at a certain height. The summer of 1784 was reckoned among the Druses one of the hottest they remembered, yet I never found the heat to be compared to that I had felt at Saide (Sidon) or Beirout.

"In this climate the order of the seasons is nearly the same as in the middle provinces of France; the winter, which lasts from November to March (exclusive), is sharp and rigorous. Not a year passes without snow, and the earth is frequently covered several feet deep with it for months together; the spring and autumn are mild, and the summer-heat is absolutely insupportable. In the plains, on the contrary, as soon as the sun returns to the equator, the transition is rapid to oppressive heats, which continue to the end of October. But then the winter is so moderate, that the orange, date, banana, and other delicate trees, flourish in the open air; and it appears equally extraordinary and picturesque to an European at Tripoli to behold under his windows, in the month of January, orange-trees, laden with flowers and fruit, while the lofty head of Lebanon is seen covered with ice and snow. It must, nevertheless, be observed, that in the northern parts, and to the east of the mountains, the winter is more rigorous, without the summer being less hot. At Antioch, Aleppo, and Damascus, and in the Haouran, there are several weeks of frost and snow every winter, which arises from the

\* Along the coast of Syria and Tripoli, in particular, the lowest degrees to which the thermometer falls in winter are 8 and 9. (50 and 52 of Fahrenheit's): in summer, in close apartments, it rises from 24 to 26 (88 to 90). As for the barometer, it is remarkable that at the latter end of May it fixes at 20 inches, and never varies till October.

situation of the country still more than the difference of latitude; for, in fact, all the plain to the east of the mountains is very high above the level of the sea, exposed to all the parching blasts of the north and north-east, and screened from the humid winds of the south and south-west. Besides, Antioch and Aleppo receive from the mountains of Scanderoon, which are within sight, an air which the snow that covers them so long must necessarily render very sharp.

“Syria, therefore, unites different climates under the same sky, and collects, within a narrow compass, pleasures and productions, which nature has elsewhere dispersed at great distances of time and places. With us, for instance, seasons are separated by months; there we may say they are only separated by hours. If in Saide or Tripoli we are incommoded by the heats of July,—in six hours we are in the neighbouring mountains, in the temperature of March: or, on the other hand, if chilled by the frosts of December,—at Besharri, a day’s journey brings us back to the coast amid the flowers of May.<sup>a</sup> The Arabian poets have therefore said, that ‘the Sannin<sup>b</sup> bears winter on his head, spring on his shoulders, and autumn in his bosom, while summer lies sleeping at his feet.’ I have myself,” says our author, “experienced this figurative observation during the eight months I resided at the monastery of Mar-Hanna, seven leagues from Beirout. At the end of February I left at Tripoli a variety of vegetables which were in perfection, and many flowers in full bloom. On my arrival at Antoura, I found the plants only beginning to shoot, and, at Mar-Hanna, everything was covered with snow. It had not entirely left the Sannin till the end of April, and already, in the valley it overlooks, roses had begun to bud. The early figs were past at Beirout, when they were first gathered with us, and the silk-worms were in the cod before our mulberry-trees were half stripped.

“With these numerous advantages of climate and of soil, it is not astonishing that Syria should always have been esteemed a most delicious country, and that the Greeks and Romans ranked it among the most beautiful of their provinces, and even thought it not inferior to Egypt. In modern times, also, a pacha, who was acquainted with both these provinces, being asked to which he gave the preference, replied, ‘Egypt, without doubt, is a most beautiful farm, but Syria is a charming country-house.’

“The qualities of the air and waters must not be overlooked. These elements present in Syria a very remarkable phenomena. On the mountains, and in all the elevated plain which stretches to the eastward, the air is light, pure, and dry; while on the coast, and especially from Scanderoon to Jaffa, it is moist and heavy: thus Syria is divided lengthwise into two different districts, separated by the chain of mountains which also cause their diversity; for these preventing, by their height, the free passage of the westerly winds, force the vapours which they bring from the sea to collect in the valleys; and as air is light only in proportion to its purity, these are unable to rise above the summits of this rampart. The consequence is, that the air of the desert and the mountains, though sufficiently wholesome for such as are in no danger of pulmonary complaints, is hurtful to those who are, and it is necessary to send such from Aleppo to Latakia or to Saide. This good property of the air on the coast is, however, outweighed by more serious bad ones; and it may in general be pronounced unhealthy, as it causes intermittent and putrid fevers, and such defluxions of the eyes as are common in Egypt. The evening dews, and sleeping on the terraces, are found much less hurtful in the mountains and interior parts of the country, as the distance from the sea is greater.

“The waters of this country have also a remarkable difference. In the mountains, that of the springs is light, and of a very good quality; but in the plain, both to the east and west, if it has no natural or artificial communication with the springs, we find nothing but brackish water, which becomes still more so the nearer we approach the desert, where there is not a drop of any other. This inconvenience has rendered rain so precious to the inhabitants of the

<sup>a</sup> This is the practice of several of the inhabitants of this district, who pass the winter near Tripoli, while their houses are buried under the snow.

<sup>b</sup> The highest summit of Lebanon.

frontiers, that they have in all ages taken care to collect it in wells and caverns carefully closed ; hence among all ruins cisterns are the first things we discover.

“The face of the heavens in Syria, particularly on the coast and in the desert, is, in general, more constant and regular than in our climates : rarely is the sun obscured for two successive days. In the course of a whole summer we see few clouds and still less rain, which only begins about the end of October, and then is neither long nor plentiful. The husbandmen wish for it to sow what they call their *winter* crop, that is, their wheat and barley. In December and January the rain becomes more frequent and heavier, and snow often falls in the higher country. It sometimes rains also in March and April, and the husbandman avails himself of it to sow his *summer* crop of sesamum, dourra, tobacco, cotton, beans, and water-melons. The remainder of the year is nearly uniform, and drought is more frequently complained of than too much wet.

“The winds in Syria, as in Egypt, are in some degree periodical and governed by the seasons. About the autumnal equinox the north-west wind begins to blow more frequently and stronger. It renders the air dry, clear, and sharp ; and it is remarkable that, on the sea-coast, it causes the head-ache, like the north-east wind in Egypt ; and this more in the northern than in the southern parts, but never in the mountains.

“We may further remark that it usually blows three days successively, like the south and south-east at the other equinox. It continues to prevail till November, that is, about fifty days, and its variations are generally toward the east. These winds are followed by the north-west, the west, and south-west, which prevail from November to February. The two latter are, to use the words of the Arabs, the *fathers of the rains*. In March arise the pernicious winds from the southern quarter, with the same circumstances as in Egypt ; but they become feebler as we advance toward the north, and are much more supportable in the mountains than in the flat country. Their duration at each return is usually of twenty-four hours, or three days. The easterly winds which follow, continue till June, when a north wind succeeds, with which vessels may go and return along all the coast. At the same season, too, the wind varies through all the points every day, passing with the sun from the east to the west, to return by the north, and recommence the same circuit. At this time, also, a local wind, called the land-breeze, prevails along the coast ; during the night it springs up after sun-set, lasts till sun-rising, and reaches only two or three leagues out at sea.

“The causes of all these phenomena are problems well deserving the attention of natural philosophers. No country is better adapted to observations of this kind than Syria. It seems as if Nature had there prepared whatever is necessary to the study of her operations. We, in our foggy climates, in the depth of vast continents, are unable to pursue the great changes which happen in the atmosphere ; the confined horizon which bounds our view circumscribes also our ideas. The field of our observation is very limited ; and a thousand circumstances combine to vary the effects of natural causes. There, on the contrary, an immense scene opens before us, and the great agents of Nature are collected in a space which renders it easy to watch their various operations. To the west is the vast liquid plain of the Mediterranean ; to the east the plain of the desert, no less vast, but absolutely dry ; in the midst of these two level surfaces rise the mountains, whose summits are so many observatories, from whence the sight may discern full thirty leagues. Four observatories might command the whole extent of Syria, and from the top of Casius, Lebanon, and Tabor, let nothing escape them within that boundless horizon.”

In cloudy weather, especially when the winds are tempestuous, and blow, as they often do in these cases, in several directions, *waterspouts* are more frequent near the Capes of Latikea, Greego, and Carmel, than in any other part of the Mediterranean. They are the most frequent at the equinoxes.\*

With respect to the *land-breezes*, as they are called, it should be observed that along the coast of Syria they blow from the land during the night, and from the sea during the day. At the most, the wind, as from the land, does not advance more than two or three leagues

\* Shaw, ii. 134 ; Volney, i. 315.

into the sea. Its strength and extent is proportioned to the height and steepness of the declivity which it sweeps. Hence it reaches further at the foot of Lebanon and the northern chain of eminences, because the mountains in that quarter are loftier, steeper, and nearer the sea; and there are often violent and sudden squalls at the mouth of the Kasmia, where the deep valley of the Bekaa,<sup>a</sup> collecting the air in its narrow channel, propels it as from a funnel. These winds do not extend so far as the coast of Palestine, because the mountains are there not so lofty, and between them and the sea there is a plain of five or six leagues; and about Gaza and the coast of Egypt they are never known, because the country has no declivity proper to cause them. In short, they are here, as everywhere, stronger in summer and feebler in winter, the heat and refraction by which they are produced being in the latter season less considerable.

The *dews* of Syria are lighter when the sky is clouded than when it is clear. At all times dew is less abundant upon the Lebanon mountains than on the coast and in Lower Egypt.

There is nothing particular in the *clouds* and *fogs* of Palestine to afford ground for a general statement, unless that both are less frequent than in more moist and cold climates, and, except in Lebanon, are not seen during the warm and dry summer season.

*Thunder* occurs in Syria, as well as in the Delta of Egypt. In the Delta and in the plain of Palestine<sup>b</sup> it is extremely rare in summer and more frequent in winter; while in the mountains, on the contrary, it is more common in summer, and is very seldom heard in winter. In both these countries it oftenest occurs in the rainy season, or about the time of the equinoxes, especially the autumnal one. It is further remarkable that the thunder never comes on from the land side, but always from the sea.

The *storms* which fall on the Delta and Syria constantly come from the Mediterranean. These storms in general happen either in the evening or morning, and rarely in the middle of the day. They are accompanied with violent showers, and sometimes with hail, which in an hour's time render the country full of little lakes.

In proceeding now to our HISTORY OF THE MONTHS, it must be regarded as an inconvenience that it cannot commence with the initiatory month of a season—as it would according to *both* the Hebrew reckonings,—but with that which is in Syria, as in our own climate, the second month of winter, namely—

## JANUARY.

**WEATHER.**—Russell, in his 'Natural History of Aleppo,'<sup>c</sup> states that the rigour of the winter is supposed by the natives to commence about the 20th of December, and lasts forty days, naming it for that reason *Murbania*. It therefore includes the whole of January, and indeed, ends with that month: Russell adds that their computation of this term is pretty near the truth, for although frost as well as snow has been observed both earlier and later than the limits of the *Murbania*, yet in most years the true wintry weather falls within them. The air at such times is often so sharp and piercing that the cold appears excessive even to strangers arrived from much colder climates. The winters of different years vary considerably, both in the degree of cold and in the quantity of rain and snow which falls in the months of December, January, and February. It is seldom that there is not some frosty weather in winter; but many years pass entirely without snow. The snow does not remain long in the streets of Aleppo. In only three winters out of thirteen was it observed to lie more than one day: and in only three out of thirteen was there ice of sufficient strength to bear the weight

<sup>a</sup> See before, p. cvii.

<sup>b</sup> That is, the plain along the coast. Volney says that the climate of the southern part of this plain, about Gaza, is very similar to that of the Delta.

<sup>c</sup> See the Introductory Chapter, "Authorities," p. xxi. By a series of minute comparisons unnecessary to detail, we have satisfied ourselves that statements in Russell's excellent work, respecting the climate and seasons of the Aleppo district, apply very closely to the greater part of Palestine; that is, to all except the extensive plain of the coast, the plains and valleys bordering the low level of the Jordan and its lakes; and of course the territory in the extreme south of Palestine, and between that and Egypt. It thus follows that the accounts of Dr. Russell may be taken (with some limitations, to which we shall attend) as those of a traveller speaking of the higher levels of Palestine. It is a great satisfaction to be thus enabled to employ such valuable information. The authority of Dr. Russell was not overlooked by Buhle or Walsh; but they lacked the important additional matter which Dr. Patrick Russell subsequently incorporated in a new edition of his brother's work.

of a man; and then only in shady situations, where the pool was not much exposed to the sun. When it is clear and calm, the sun has so much power, that the weather is always warm, sometimes rather hot in the open air. Violent storms of wind are rare at Aleppo. It sometimes blows hard, but only in sudden gusts of short duration; the winter and spring winds blow chiefly from between the N.W. and S.E., being proportionally colder as they verge towards the east. The winds in winter are in general moderate, seldom rising to a brisk gale.<sup>a</sup>

The general character which Dr. Russell gives of the weather at Aleppo in the month of JANUARY is, that it is commonly either frosty or rainy. The snow that falls there falls chiefly in this month, but is seldom in any considerable quantity, and does not remain long unmelted in the streets. The middle of the month is the most usual time of snow; after which the weather often continues frosty to the end. Rain generally descends in the night, and the winds blow moderately, mostly from the northern or eastern quarter. The highest temperature marked by the thermometer is fifty-seven degrees, the least thirty-four degrees. At three in the afternoon the mercury is usually found three or four degrees higher than at eight or nine in the morning. As we shall continue to cite the registrations of this thermometer, it is proper to observe that it was kept in a situation some degrees warmer in winter and cooler in summer than the external air.

How well this applies to Palestine will be seen from the following particulars, which more expressly refer to that region:—

The mountains of Lebanon are covered all the winter with snow, which, when the winds are easterly affects the whole coast from Tripoli to Sidon, with a more piercing cold than is known even in this northern climate. But the other maritime and inland places, whether to the north or south of these mountains, enjoy a much milder temperature, and a more regular change in the seasons.<sup>b</sup>

Le Bruyn, travelling along the maritime coast, in this month, found the whole country around Tripoli covered with deep snow.<sup>c</sup> On the same coast, more to the south, between Tyre and Acre, on the 9th, Buckingham found the cold great, and the thermometer at 45° in the open air, before sunrise. Brown takes notice of snow at Jaffa on the 24th of this month.<sup>d</sup> Major Skinner, who states that he traversed the country in a season unusually severe, speaks much of snow and cold. He mentions a village under Mount Carmel, in which many houses had been destroyed by the great quantities of snow which had fallen.<sup>e</sup> He spent a night in that village, and on the morning of the 28th found the court-yard full of snow, which had fallen during the night. Snow was then resting on the ridge of Mount Carmel.<sup>f</sup> Penetrating to the interior of the country, the same traveller reached Nazareth on the 30th. The heights around the town, and many of the houses in it were covered with snow, large heaps of which were piled up in the court-yard of the convent. Many of the smaller houses had been destroyed by it; and, the next day, he found that the deep snow in the streets rendered it impossible to quit the city, and difficult to move about in it. A thaw had, however, commenced.<sup>g</sup> The snow falls thick, and lies long on the mountains and high intervening plains and valleys of Jebel Haouran, which may be said to bound eastward the country beyond Jordan. Madox<sup>h</sup> found it so at the end of this month. The same traveller, on the 13th, found Damascus covered with snow as well as the mountains and plain around it.<sup>i</sup> From its peculiarly low level and enclosed situation, the plain of Jericho, and indeed the whole valley of the Jordan enjoys a remarkably mild winter climate. Mariti<sup>k</sup> adduces and confirms the statement of Josephus,<sup>l</sup> who reports that the winter of the plain of Jericho resembled spring, and that the inhabitants were clothed in linen garments, at the same time that it snowed in other parts of Judea. Correspondingly, Burckhardt<sup>m</sup> takes notice that snow is almost unknown on the borders of the lake of Tiberias. It appears, indeed, generally, that when the sun is not obscured the day is often exceedingly warm when the night has been frosty. The Scriptures allude to this,<sup>n</sup> as do various travellers. La Roque was much incommoded by the heat of the sun when travelling near Tyre on the 29th of this month.<sup>o</sup>

<sup>a</sup> Russell, i. 69—71.

<sup>f</sup> Pages 114, 115.

<sup>l</sup> De Bello, v. 4.

<sup>b</sup> Shaw, ii. 134.

<sup>g</sup> Pages 120, 121, 126.

<sup>m</sup> Syria, p. 320.

<sup>c</sup> Tom. iii. p. 228.

<sup>h</sup> Vol. ii. 165.

<sup>n</sup> Gen. xxxi. 40; Jeremiah, xxxvi. 30.

<sup>d</sup> Page 361.

<sup>i</sup> Vol. ii. 154.

<sup>o</sup> Vol. i. p. 111.

<sup>k</sup> Chap. xxiii.

<sup>o</sup> Voyage, i. 18.

Buckingham states that in Palestine the heaviest rains are generally in December, and that in January the country is verdant throughout.<sup>a</sup> In the time of his travel, however, there had been an extraordinary lack of winter rain; there had been a continued drought from October to January, in consequence of which the country suffered greatly. However, much rain ordinarily falls in January. On the coast, at Caïpha, under Mount Carmel, Major Skinner takes notice, on the 17th that there had been incessant rain for fourteen days, so that a small river which flows through the town just named had burst its bounds, and swept away most of the houses. This shows that such rain was unusual, although all the torrents, lakes, and rivers are much swollen, and large tracts of low-lying country are inundated by the rains of this and the preceding month. At the same plain, the rain continued to the 18th, when "the sea was as wild as possible;" and on the 20th the same traveller was driven by a *thunder-storm* to seek shelter in a cave of Mount Carmel.<sup>b</sup> The several travellers cited below<sup>c</sup> furnish a series of observations extending over different parts of Palestine, on both sides the Jordan, in which notices of violent rains occur dispersedly from one end of the month to the other. The rains are heaviest and most frequent during the night and early morning. Buckingham observes that the S.W. wind generally brought violent rain; indeed the winds attended by rain are generally west, or have a westerly inclination,<sup>d</sup> which it seems was a popular observation of the ancient inhabitants, as noticed by Christ:—"When ye see a cloud rise out of the west, straightway ye say, There cometh a shower, and so it is."<sup>e</sup> One of the travellers we have cited, Gumpenberg, notices that from the 5th to the 25th of January the weather at Jerusalem was alternately cold and hot, rainy and fine, cloudy and windy. And Korte<sup>f</sup> mentions December, January, and February, as the months in which the greatest quantities of rain fall in Palestine.

In this month *the sky* is often dark and overcast in the early morning, and sometimes throughout the day, and for several days together. Skinner, then on the coast, near Carmel, notices on the 29th that they had the first clear sky which had been over them for many days.<sup>g</sup> *Fogs* occur in the morning, which clear up as the day advances. Madox describes Damascus and the country around as invested by a dense fog at high-day; but the sky was cloudless, and the brilliancy of the sun gave to it a white and woolly appearance.<sup>h</sup>

**TREES AND SHRUBS.**—There are two species of amygdalus in Palestine, the common *almond-tree*<sup>i</sup> and the *peach-tree*;<sup>k</sup> and both are this month in blossom in every part of Palestine, on both sides the Jordan.<sup>l</sup> It was, doubtless, from this winter blossoming of the almond-tree, not less than from the snowy whiteness of the blossoms, that the hoary head of the aged man is, by a beautiful metaphor, said in Scripture to "flourish like the almond-tree."<sup>m</sup> Celsus<sup>n</sup> conjectures that the Hebrew name of the plant *shakeed*, from the verb *shakad*, "to be sleepless, to watch;" hence, "to hasten," bears an allusion to the earliness of its blossoms and fruit. There is, indeed, an evident allusion to this etymology in Jer. i. 11, 12.<sup>o</sup> The almond-tree grows extensively in Palestine, and may be regarded as one of its most characteristic productions. As such it appears from the most ancient times. Almonds were not forgotten among the products of the land (dainties in Egypt) which Jacob sent as a present to the governor of that country;<sup>p</sup> the rod of Aaron, that miraculously blossomed in a night, was of almond;<sup>q</sup> and the bowls of the golden candlestick, in the tabernacle, were "made like unto almonds, with a knop and a flower in one branch."<sup>r</sup>

<sup>a</sup> Palestine, i. 223.

<sup>b</sup> Skinner, i. 65, 72, 99.

<sup>c</sup> Gumpenberg, i. 448, 449; Buckingham, Palestine, i. 112, 141; Skinner, i. 115, &c.; Madox, ii. 166.

<sup>d</sup> Shaw, ii. 127. <sup>e</sup> Luke, xii. 54. <sup>f</sup> Supp. p. 148. <sup>g</sup> Journey, i. 105; see also Buckingham's, Palestine, i. 112.

<sup>h</sup> Vol. i. 146. <sup>i</sup> *Amygdalus communis*. <sup>k</sup> *Amygdalus persicara*, the peach-tree.

<sup>l</sup> Benard saw it in blossom on the 9th of this month, at Sidon, on the 19th at Acre, and on the 23rd at Rama. So did Baumgarten on the 18th at Beirut; and Gumpenberg saw the peach-tree (*A. persicara*) in blossom at Jerusalem on the 25th, and in Galilee on the 31st. On the 30th Buckingham saw the almond in bloom in the bed of the Jabbok (Zerka) beyond Jordan. Benard, 112, 113; Baumgarten, 125; Gumpenberg, 460, 451; Buckingham, i. 251.

<sup>m</sup> Eccles. xii. 5.

<sup>n</sup> Hierobotanicon, i. 227.

<sup>o</sup> "Jeremiah what seest thou? And I said, a rod of an *almond-tree*. Then said the Lord to me, Thou hast well seen: for I will *hasten* my word to perform it." Here, by an untranslatable paranomasia, the words *almond-tree* and *hasten* are the same.

<sup>p</sup> Gen. xliii. 11.

<sup>q</sup> Num. xvii. 8.

<sup>r</sup> Exod. xxv. 33.

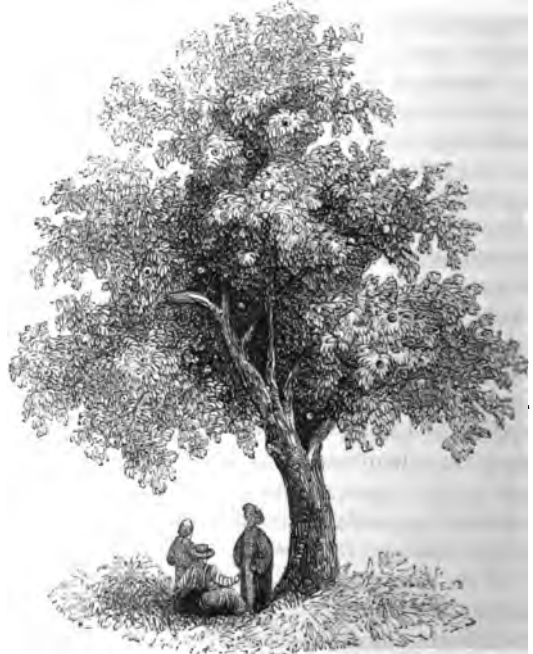
[Almond. *Amygdalus communis*.]

much-valued sweet kernel of the stone, or nut. These kernels yield on expression one half their weight of oil, the well-known oil of almonds, which is more agreeable than the common expressed oils. It is remarkable that this oil is not once *named* in the Scriptures. Indeed even olive-oil is not very often mentioned by name; and we think that in many of the cases in which "oil," simply, is mentioned, without the specification of its quality, it is wrong to suppose that olive-oil is always intended; for it is incredible that the oil of almonds could be unknown to, or unvalued by, a people who sought after and employed vegetable oils so largely as the Hebrews.

Gumpenberg<sup>a</sup> says that the *olive-tree* had put forth its leaves at Jerusalem on the 12th of this month.

Russell notices that neither oranges nor lemons will stand the winters of Aleppo,<sup>b</sup> nor will it in the higher and colder regions of Palestine. But the *orange-tree* as well as the *citron* thrive well along the coast of Palestine, and produce very excellent fruit in great abundance. Buckingham<sup>c</sup> noticed on the 16th of this month that the orange-trees at Ramla continued to be laden with their golden fruit. Gumpenberg<sup>d</sup> also states that on the 1st of February he saw an orange-tree full of fruit and blossoms, close to the Lake of Tiberias. Oranges and citrons are also produced in the interior; D'Arvieux<sup>e</sup> and Thevenot saw both at Shechem (*Nab-lous*). We find no notice of the con-

An almond-tree, covered with its beautiful blossoms, varying from a blush colour to a snowy white, is one of the most elegant objects in nature, and the more so from the earliness of their appearance, when few other trees have leaves or flowers. In England it generally blossoms in March, but still exhibits its tendency to bloom earlier, as in its native country; for a forward season often brings out the blooms in February; but they are generally destroyed by an ensuing frost, and then the tree bears little or no fruit. The peach-tree (*amyg. persicaria*) has a larger leaf than the common almond, which is, however, of higher growth, and generally blossoms a few weeks later. Both are of quick growth and short duration. The drupe of the almond has a leathery covering, not pulpy or edible, like that of the peach. Its productive value lies in the well-known and



[Orange-Tree.]

<sup>a</sup> Page 449.<sup>c</sup> ' Palestine,' i. 251.<sup>d</sup> Reisbach, 450.<sup>b</sup> Vol. i. p. 70.<sup>e</sup> D'Arvieux, ii. 79; Thevenot, i. 215.

dition of the citron-tree in this month. Probably the same as that of the orange. However, for convenience, we may in this place mention that it is supposed, with very good reason, that the fruit mentioned in our translation of the Bible under the name of "apple," was in reality "the citron." The word occurs in six places, in which the fruit is mentioned with circumstances which agree well with the citron, but not with the apple, which fruit indeed is poor and bad in Palestine, so that most of those consumed there are imported from Damascus. The *תפוח*, *tapuach*, which is the name in question, occurs as describing one of the noblest trees of the wood, the fruit of which was very sweet, or pleasant: "this fruit was of the colour of gold,"<sup>b</sup> extremely fragrant,<sup>c</sup> and therefore proper for those to smell who were ready to faint:<sup>d</sup> it is merely named in another place;<sup>e</sup> and Joel counts it with the vine, the fig-tree, the palm, and pomegranate, as among the worthiest trees of Palestine.<sup>f</sup> Some, indeed, would apply this to the orange; but that valuable fruit has not, like the citron, *all* the qualities ascribed to the *tapuach*; and it has even been doubted whether the orange or the lemon were known anciently in that part of the world. The citron certainly was; for Josephus mentions how the Jews, at the feast of tabernacles, pelted king Alexander Janneus with citrons, which they had then in their hands; for (as he says) the law required that at that feast every one should have branches of the palm-tree *and citron-tree*.<sup>g</sup> This not only evinces that the citron-tree, and the usage intimated, existed in and before the time of Alexander Janneus; but that Josephus, as well as the Jewish writers generally, understood the citron-tree to be denoted by "the boughs of the *goodly tree*," in Lev. xxiii. 40; and, consequently, that it existed in the land before the time of Moses.

It may also be added that the citron is still used for the purposes ascribed to the *tapuach*; for its refreshing fragrance is so highly esteemed, that the ladies have very commonly a citron lying by their side, or held in their hand, that they may smell to it. Some writers suppose, however, that the word in question has the same extensive sense as the corresponding Arabic word which, while (like the Latin *malum*) it denotes primarily apples, includes also citrons, peaches, apricots, &c.; but the Scriptural name seems to be applied in a more specific manner. One of the Scriptural passages referred to, in which "a word fitly spoken" is compared to "apples of gold in baskets (not 'pictures') of silver," is thought to allude to the manner in which the fruit was presented at the court of Solomon; but the rabbinical writers would rather refer it to the fact that the first-fruits were presented in silver baskets in the Temple. The citron takes its specific name (*citrus medica*) from having been introduced into Europe from Media.



Ancient. [Fruit Baskets.] Modern.

In England it will not ripen its fruit unless the season be unusually warm, and the trees well managed. The fruit is not eaten in a raw state, but is generally preserved, and made into sweet-meats. Wherever the citron grows we might expect to find the lemon, which is but a variety of it. The *lemon-tree* is accordingly found in Palestine, although from the comparative infrequency of its being mentioned, it would seem to be more rare than either the orange or the citron. It was noticed by Pococke:<sup>h</sup> Egmont and Heyman<sup>i</sup> saw it in Galilee, at Hottein and Safat. Rauwolf<sup>k</sup> saw it, together with the citron and orange, in a valley near Bethlehem. Another of the family, the *lime-tree*, grows in the country: at a place just named, Hottein (called by him Hatti, and by Pococke, Hutin), Clarke<sup>l</sup> and his company received hospitable entertainment from a party of Arabs in, and under the shade of, a plantation of *lime and lemon-trees*.

If the winter has been mild, some of the *winter figs*, as they are called, still remain ripening on the *fig-trees*, although stripped of their leaves; and such as then continue are gathered as delicious morsels in the early spring. The figs of this winter crop are longer in shape and of a darker colour than those which the fig-tree affords in summer.<sup>m</sup>

<sup>a</sup> Sol. Song. ii. 3.

<sup>b</sup> Prov. xxv. 11.

<sup>c</sup> Sol. Song. vii. 8.

<sup>d</sup> Ibid. ii. 5.

<sup>e</sup> Ibid. viii. 5.

<sup>f</sup> Joel, i. 12.

<sup>g</sup> Antiq. xiii. 5.

<sup>h</sup> Vol. ii. p. 67.

<sup>i</sup> Vol. ii. p. 40—48.

<sup>k</sup> Pt. II. chap. xxii. p. 379.

<sup>l</sup> Vol. iv. p. 203.

<sup>m</sup> Shaw, ii. 15.



Hasselquist<sup>a</sup> observes that in this southern climate the trees are again in leaf about the beginning of January, before those of the preceding year are entirely fallen off; and that, for the quicker production of the leaves, most trees, except sycamores and willows, are furnished with small excrescences, lightly joined together, instead of buds, which nature could better refuse these trees than those of more northern regions. The former part of this observation is confirmed by other travellers. Shaw,<sup>b</sup> who travelled in Syria and Phœnicia in December and January, says that the whole country looked, at that season, verdant and cheerful, and the woods particularly, which were chiefly planted with the gall-bearing oak.<sup>c</sup> So also Buckingham,<sup>d</sup> at the end of the month (30th), in Gilead, beyond Jordan, took notice of a stately and wide-spreading oak, which, like the rest of the oaks he had seen, was not an evergreen one, but had its leaves withered, and its boughs almost bare, *while the greater part of the other trees found there were fresh in verdure.*

THE VINE.—Gumpenberg<sup>e</sup> affirms that on the 12th of this month he saw a vine in leaf in the garden of the consul at Jerusalem. This observation seems to require confirmation. Grapes cannot be preserved until this or the following month in any part of Palestine.<sup>f</sup>

GRAIN.—Buhle and Walch both complain of the absence of any single fact respecting the state of the corn operations this month in Palestine, and both content themselves with the testimony of Russell, which, referring to the neighbourhood of Aleppo, is, that “the earliest wheat is sown in October; other grains continue to be sown till the end of January, and barley even so late as the end of February.”<sup>g</sup> This they strangely agree in misunderstanding to mean that *wheat* continued to be sown in January, whereas Russell expressly says *other grains* than wheat; and among “other grains” he not only includes *dourra*, the name which the natives give to Indian millet, but all the various pulses which are cultivated in the country. On this point the statement of Volney is the most clear and satisfactory. “The seed-time of the winter-crop, called *Shetawia*, takes place, throughout Syria, *only* at the time of the autumnal rains, or towards the end of October. The time of reaping this crop varies according to the difference of situation. In Palestine and the Haouran they reap their wheat and barley from the end of April through the whole month of May. But as we advance towards the north, or ascend the mountains, the harvest does not begin till June or July. The seed-time of the summer crop, or *Saifia*, begins with the spring rains, that is, in March and April, and their harvests in the months of September and October.” This simple explanation as to the different seasons of sowing and harvest clears up all the difficulties and seeming discrepancies by which Buhle and Walch are quite bewildered. There is, consequently, no wheat sown in January. The ploughing and sowing which Buckingham saw in this month (15th) in the plain of the coast, near Jaffa,<sup>h</sup> must have been for barley, according to the intimation of Russell. Barley is much cultivated, chiefly for the horses, which are rarely fed with other corn grain. Oats are not cultivated in Palestine; but, although rarely, are found in some parts of Syria. Rye is not cultivated in Palestine and the immediately adjoining countries; but Volney says it is grown in some parts of Syria for the use of horses.<sup>i</sup>

When the usual rains have not been wanting, the lands are, in parcels, verdant with the young corn, which now appears above ground. Buckingham visited the country at a time when the lands west of the Jordan were parched and barren for want of the winter rains; but in Gilead, where the soil had received the gentle showers of the mountains, the young blades of corn were just appearing above ground at the end (30th) of the month.<sup>k</sup> About the same time (27th) in another year, Madox<sup>l</sup> notices that at the foot of the Haouran mountains the corn was springing up, and the turf of a fine green.

Besides different varieties of wheat and barley, Russell names sesamum and Indian millet<sup>m</sup>

<sup>a</sup> Reise nach Palestina, p. 260. Epist. 13 ad Lionæum.

<sup>b</sup> *Galla Syriaca* are noticed by Vegetius, *De Re Rustica*, ii. 62.

<sup>c</sup> Reise, 449—50.

<sup>d</sup> Korte, 435.

<sup>e</sup> Vol. i. p. 74.

<sup>f</sup> Russell, i. p. 74; Rauwolf, i. 68; Korte, 143; Volney, i. 295.

<sup>g</sup> Vol. ii. p. 164.

<sup>h</sup> *Hulcus sorghum*, called by the natives *dourra*.

<sup>i</sup> Vol. ii. p. 146.

<sup>j</sup> ‘Palestine,’ vol. ii. p. 127.

<sup>k</sup> ‘Palestine,’ i. 223-4.

<sup>l</sup> ‘Palestine,’ ii. 117.

as being cultivated in the neighbourhood of Aleppo. Palestine has, besides, the common millet; <sup>a</sup> maize <sup>b</sup> thrives in the light soil of Baalbec and in some other parts of the country; and there are marshy grounds in which rice <sup>c</sup> is cultivated with success. <sup>d</sup>

**ESCULENT VEGETABLES.** <sup>e</sup>—Russell gives a list of the leguminous vegetables cultivated about Aleppo, none of which are wanting in Palestine, which also contains a few not included in his list. Those named by Russell are:—Lentils, <sup>f</sup> chiches, <sup>g</sup> beans, <sup>h</sup> chichling, <sup>i</sup> small vetch, <sup>k</sup> small green kidney-bean. <sup>l</sup> The species of *leguminosæ*, not contained in this list, which grow in Palestine, are the hairy-flowered yellow vetch, <sup>m</sup> and the several species of *Lathyrus*; as *L. ambicus*, *L. sativus* (blue chichling vetch), *L. amphicarpos* (earth-pea), *L. biflorus*, and *L. clymenum* (various flowered lathyrus). The common bean is in blossom this month. Benard saw it in bloom at Lydda, near Jaffa, on the 23rd, and observes that, earlier in the month, he had seen it in bloom at Sidon and Acre. The cauliflower <sup>n</sup> ripens towards the end of this month.

**PLANTS.** <sup>o</sup>—The mandrake is this month in flower, <sup>p</sup> as is also the wormwood, <sup>q</sup> probably the species *artemisia judaica*, of which, under the name of *absinthium santonicum judaicum*, Rauwolf observes that it grows everywhere in Palestine. He describes it as having small ash-coloured leaves, and many small stalks, full of small yellowish seeds; and that it is of an unpleasant smell, very bitter, with a saline sharpness. Both the leaves and seeds of this plant are used in medicine in the East, and are reported to be tonic, stomachic, and anthelmintic. This is generally conceived to be the *Laanah* of Scripture, <sup>r</sup> translated “wormwood;” and although severer effects seem to be ascribed to the *laanah* than the *A. judaica* is capable of producing, there is reason to conclude that it may be identified with this or some kindred plant.

In the month of January the groves and meadows of Palestine are adorned in great profusion with the blossoms of different species of anemone, ranunculus, crocus, tulip, narcissus, hyacinth, lily, and violet. Moncons, <sup>s</sup> journeying on the 1st, saw on the coast, between Lebanon and the sea, a green meadow, covered with *anemones*. <sup>t</sup> Benard <sup>u</sup> noticed, near Acre, on the 18th, and about Jaffa on the 23rd, *tulips*, white, red, and blue, with an infinite number of other beautiful flowers. Gumpenberg <sup>v</sup> saw the meadows of Galilee covered with the same flowers on the 31st. The tulips were probably varieties of the common garden tulip, <sup>w</sup> which is the only species that any botanist travelling in Palestine has named. Tulips figure conspicuously among the flowers of Palestine. Shaw <sup>x</sup> adds *colchicas* to the list, to which the common *crocus* (saffron) may be joined. The same traveller saw an elegant species of the *blue lily*, the same, he says, as the *Lilium Persicum florens* of Morison. Besides the same as these, Russell names the *narcissus*, the *hyacinth*, and the *violet*, as being in flower in the neighbourhood of Aleppo; and although we know not that any traveller in the Holy Land

<sup>a</sup> *Panicum miliaceum*.

<sup>b</sup> *Zea mais*, popularly, Indian corn.

<sup>c</sup> *Oriza sativa*.

<sup>d</sup> Volney, i. 295.

<sup>e</sup> This heading is to be understood in the usual and popular sense, for many plants noticed under other heads are properly esculent.

<sup>f</sup> The common lentil (*Ervum lens*) called by the natives *Shasir*.

<sup>g</sup> He means the chick pea (*Cicer arietinum*) called by the natives *Husmes*.

<sup>h</sup> The common garden bean (*Vicia Faba*) called *Fool*.

<sup>i</sup> Russell gives the scientific synonyme *Lathyrus*, but omits to state whether *Lathyrus cicera* (the dwarf chichling vetch) or *Lathyrus sativus* (the common blue chichling vetch). The native name is *Jilban*.

<sup>k</sup> *Vicia* (species not named, probably *sativa*), native name, *Kishna*.

<sup>l</sup> *Phaseolus max*, called *Maash*.

<sup>m</sup> *Vicia hybrida*.

<sup>n</sup> *Brassica cauliflora*. We know not what other species of brassica Palestine has, save *brassica oleracea*, the common sea colewort or cabbage.

<sup>o</sup> This head is to be understood in a common popular sense. We have already intimated (and it is evident) that the form we have chosen as the best on the whole, renders a strictly scientific distribution impossible. In short, this head is intended to include all plants not embraced under those which precede it. It will even contain some which might have been contained in them. Those who know the subject will, however, see the reasons for our distributions, and to others it does not signify.

<sup>p</sup> Shaw, ii. 146.

<sup>q</sup> Benard, 107. Four species of *Artemisia* grow in Palestine, namely *A. nilotica*, *A. judaica*, *A. fruticosa*, *A. cinerea*.

<sup>r</sup> Deut. xxix. 8; Pro. v. 4; Jer. ix. 15; xxiii. 15; Lam. iii. 15, 19; Amos v. 7; vi. 12. <sup>s</sup> Vol. ii. 113.

<sup>t</sup> Principally *A. coronaria*, the narrow-leaved or poppy anemone.

<sup>u</sup> Voyage, 107, 112.

<sup>v</sup> Tom. i. p. 450.

<sup>w</sup> *T. gemerita*.

<sup>x</sup> Vol. ii. p. 146.

has noticed them in January, they exist there, and are probably then in bloom, as they are noticed in the very beginning of February. As the narcissus is in flower during most part of the winter near Aleppo, it is, doubtless, the same in Palestine. A beautiful species, called *modaf* by the natives, is cultivated by them (near Aleppo) in the open fields; and towards the end of winter, certain Arab women are seen in the streets, carrying baskets of the flowers for sale, and chanting, as they walk along, *Ya ma hullu zemanoo! Halku kareem!* "How delightful its season! Its maker is bountiful!"<sup>a</sup> The common polyanthus narcissus<sup>b</sup> is that which abounds most in Palestine." In the neighbourhood of Aleppo the hyacinths and violets "become plentiful in January." In Palestine the hyacinths which have been named by travellers are, the garden hyacinth,<sup>c</sup> which is indeed a native of the Levant, and from which such numerous and beautiful varieties have been obtained by the Dutch cultivators. The Holy Land has also the curious purple-grape hyacinth<sup>d</sup> in its cornfields, and the blue-grape hyacinth<sup>e</sup> in its vineyards and arable lands.

## FEBRUARY.

**WEATHER.**—Of the weather in this month at Aleppo, Dr. Russell states that it is more variable than in the preceding month. It sometimes snows a little, and there are commonly a few frosty days; but it is more usually a wet month, a good deal of rain falling in the first fortnight. The sky, in fair weather, especially in the afternoons, is often laden with large white clouds, at which times it is moderately warm without doors; at other times it lowers and threatens, without raining. The winds are much the same as in the preceding month, till towards the end, when it sometimes blows hard westerly. The thermometer marks the greatest heat at 55° and the least at 40°; and the greatest difference in any one day is eight degrees. The morning station of the thermometer, in the first fortnight, varies from 42° to 47°; the difference in the afternoon is 1, 2, or 3 degrees. In the last fortnight, the mercury, except in frost, rises gradually to about 50°; and the difference in the afternoon is commonly 4 or 5 degrees.<sup>f</sup> In another place,<sup>g</sup> the same writer states, that the spring may be considered to commence early in February. The same winds, which are peculiarly cold in winter, though at this time they often blow more strongly, are much less bleak; and though the sky be often laden with black hovering clouds, accompanied with a good deal of rain, the heavy showers are of short duration, and in the variable weather there is a large proportion of sunshine.

At the beginning of this month, dazzling snow on all sides met the view of Major Skinner in departing from Nazareth. He saw the snow firm on the sides of Mount Tabor.<sup>h</sup> But after his return to the coast, he takes no further notice of snow, which had so much engaged his attention before he departed for the interior of the country. Snow usually falls this month in the southern parts of Palestine; and Shaw<sup>i</sup> reports that it is an observation at and near Jerusalem that, provided a moderate quantity of snow falls in the beginning of February, whereby the fountains are made to overflow a little afterwards, there is the prospect of a plentiful year; and that the inhabitants on such occasions make similar rejoicings to those of the Egyptians on cutting the dikes of the Nile. Southward, in the higher region of the Sinai mountains, Thevenot<sup>k</sup> met with snow, and even with ice, which no stick could break, in the beginning of February; and even at Suez, his inability to obtain admittance into the town gave him occasion to experience that the night air was severely cold.

As might be expected, the cold is this month more severe in the high country beyond Jordan, on the east, than in the other parts of Palestine. As late as the 22d, Buckingham found the snow lying on the high range of hills at Gilead, called Jebel es-Szalt, which became thicker the higher he ascended. On the summit the cold was excessive, and the snow, presenting one unbroken mass, was hardened into solid frost. This is not surprising, if, as he thinks, by a comparative estimate, that the height was 5000 feet above the level of the sea.

<sup>a</sup> Nat. Hist. of Aleppo, ii. 239.

<sup>b</sup> *N. Taxetta.*

<sup>c</sup> *H. Orientalis.*

<sup>d</sup> *H. comosus.*

<sup>e</sup> *H. botryoides*, a species which formerly received attention in England, but is now almost gone out of culture.

<sup>f</sup> Nat Hist. of Aleppo, ii. 282.

<sup>g</sup> Ibid. i. 64, 65.

<sup>h</sup> 'Journey,' i. 29, 30.

<sup>i</sup> Vol. ii. p. 137.

<sup>k</sup> 'Voyage,' i. 316, 320, 328.

The same day he reached the town of Szalt. The whole of the town was filled with snow, the streets being in some places almost impassable; and the terraces of the houses, which, from the steepness of the hill on which it stood, rose one above another, like steps, presented a number of square and snow-like masses, like sheets exposed on the ground to dry. The inhabitants, including men, women, and children, were clothed in sheep-skin jackets, with the skin, looking like red leather, turned outside, and the wool within; while the florid complexions and light-brown hair of the people, gave to the whole an appearance of a scene in the north of Europe, rather than one in the southern part of so hot a region as Syria, and bordering too upon the parched deserts of Arabia-Petræa. Buckingham was detained at this place till the 28th, by the inclemency of the weather. On the night of the 25th, the frost was so severe, that in the room where he slept the water in vessels for drinking was coated over in the morning, although all the external air had been excluded, and the apartment had been heated through the night by the breath of eleven persons; and the snow outside the door was hardened into a solid mass of ice. The morning was, however, clear and fine, the sun beaming out in full splendour, without a cloud. But it was alleged that it could not be ascertained how the weather would settle until twenty-four hours of clear sky had passed away. Accordingly, on the night of the 26th, heavy snow and intense frost again set in, soon after sunset, and continued till sunrise on the 27th; in the course of the forenoon of which day intelligence arrived that great destruction had been committed among the flocks and herds of the surrounding country; and two persons were reported to have died from exposure to the cold at a short distance from the town.<sup>a</sup>

In the country more to the east, about the mountains which bound the Haouran plain, the weather in this month must be severe, judging from the series of daily observations which Mr. Madox has given. He was detained no less than nine days (10th—19th) at El Hait, on the lower slope of the Haouran mountains, by snow and bad weather. From an analysis of the observations made by him in this quarter, and extending from near the beginning towards the end of this month, it appears that there are often heavy falls of snow, chiefly by night, but sometimes by day. The snow sometimes lies several feet deep on the ground in the morning. Sometimes, on the same night, falls of snow, alternate with showers of sleet and rain. Frost frequent, and sometimes very severe. Cold, sometimes intense, at night, when the north wind blows. The winds often blow strongly and keenly at night; generally abate as the day grows, and sometimes rise again in the afternoon. The higher mountains covered with thick snow. Snow in the plain, around the mountains, also, till about the 19th; but not so much. Even on approaching Damascus (20th) this traveller had often to make his way through water and ice. At the same time the Lebanon mountains were impassable from snow, and the post from Damascus to Beirout had been obliged to return. It is right to add, that this winter (1825) appears to have been more than usually severe for snow and cold.<sup>b</sup> Nevertheless, in this month, and especially in the latter half of it, the sun shines out brightly by day, and the air is mild and genial, especially in the country west of the Jordan. On the 14th, Buckingham found the heat oppressive even on the summit of the mountains to the west of the Lake of Tiberias, but it was tempered by a light breeze from the north-west.

According to Korte, as cited under January, the present month is the last of the three in which the greatest quantity of rain falls in Palestine. This is confirmed by the accounts of Buckingham,<sup>c</sup> Skinner,<sup>d</sup> Madox,<sup>e</sup> and others. From their collected statements it appears that the greatest quantities of rain fall by night, and in the early morning, although there are often heavy showers by day, and sometimes all the day through. Days entirely rainy occurred in Gilead, at the beginning of this month, in the year of Buckingham's visit (1815), when the whole country west of the Jordan was parched by unusual drought and heat. The plains and hollow lands are, to a great extent, inundated by the rains of the last month and the early part of this. On this account Skinner was unable to make his way across the plain of Esdraelon

<sup>a</sup> 'Arab Tribes,' 18, 20, 32, 43, 48.

<sup>b</sup> Madox, ii. 169, 172, 174, 179, 180, 131, 192.

<sup>c</sup> 'Palestine,' ii. 150, 240, 309; 'Arab Tribes,' 8, &c.

<sup>d</sup> 'Journey,' i. 129, 130, 135, 136, 148, 150, 158, 164.

<sup>e</sup> 'Excursions,' ii. 169, 174, &c.

to Jerusalem, from Nazareth, but was obliged to return to the coast. The same traveller notes inundations in the plain of the coast (south of Mount Carmel) which extended as far as the eye could reach; and Madox was greatly incommoded by water in crossing the plains between the Haouran mountains and Damascus.

The sky is often dark and cloudy, especially in the mornings. Buckingham speaks of a mist (on the hills beyond Jordan) brought by a strong south wind; and the same wind (blowing on the 10th) is described by him, with surprise, as colder than any he had yet felt in Palestine.<sup>a</sup>

*Thunder* is not unfrequent, particularly in the north, and in the latter half of the month. In all the instances we have collected, it was accompanied by rain, often by high wind, and sometimes by hail.<sup>b</sup>

In the preceding month, as well as in this, there has been occasion to mention the destruction of houses by snow, and by rain. This may require explanation. Most of the villages, and the inferior class of houses in towns are built with bricks dried in the sun; and the roofs are composed of mud laid over branches of trees supported on long straight trunks of aspen. This construction may do very well in a dry climate, in which, no doubt, it originated. It is common, and answers well, in Egypt and Arabia. But walls and roofs thus constructed cannot endure continued wet. They are dissolved and broken down by it. Even in the better sort of houses, the walls of which are of brick or stones, and the roofs of a prepared compost, these evils are not entirely avoided. It often happens that the walls are of immense thickness; but they are only coated internally and externally with brick or stone, the interval being stuffed up with loose and soft rubbish, earth, &c., for the most part easily soluble in water; and when, from continued rains or inundations, the water is able to penetrate through the outer coating to the internal mass, it gives way under the pressure and disturbance within which is thus produced. However, for the most part, sufficient care is taken, in constructing the better class of houses, to prevent such calamities from the operation of *ordinary* local contingencies; although a season *unusually* wet fails not to occasion extensive ruin among the best habitations, especially in the commoner towns, where the stones are piled loosely up in their building, without much care for preserving the perpendicular. But with respect to the villages, Mr. Elliot assures<sup>c</sup> us in reference to Palestine, and we know it to be true in other parts of Western Asia, that it is not uncommon to see half a village destroyed by a rainy season, while the loss of a roof is an event of ordinary occurrence. And Major Skinner<sup>d</sup> says, "The snow has the power in this country of demolishing a town in a night,"—an exaggeration, certainly, in its plain terms, as such destruction can only be extensive *in a night* from the effects of many previous falls of snow, or of much previous rain, whereby the walls and roofs have been soaked and saturated, so that they are not able to sustain the weight of snow thrown on them. Successive falls of snow, and successive thaws, would be alone ruinous to such roofs, as so much wet, independent of the weight imposed. Thus Madox<sup>e</sup> notices, after many days of snow and rain, even in one of the comparatively strong houses of the Haouran:—"The plaster of the walls began to come down and the snow to penetrate and drop in every direction." After this beginning, the roof would soon fall in. The inhabitants of Palestine are not insensible to these dangers, hence every house is provided with a stone roller, which is rolled over the roof after heavy rains<sup>f</sup>—a practice very usual throughout Western Asia, and which offers an exhibition not unamusing. With respect to the snow, we are not conscious that any traveller has noticed preventive measures: but we cannot suppose that the inhabitants neglect the obvious precaution, observed in other parts of Western Asia, of casting off in the morning whatever snow may have fallen on the roofs during the night. In northern Persia this is the duty of the young people; which they discharge with much glee and merriment.

**TREES.**—Since the almond-tree blossoms in January, the statement of Russell, who refers its

<sup>a</sup> Palestine, ii. 309.

<sup>b</sup> Gumpenberg, i. 452. Burckhardt: reference lost.

<sup>c</sup> Vol. ii. p. 278.

<sup>d</sup> Vol. i. p. 236.

<sup>e</sup> Vol. ii. p. 180.

<sup>f</sup> Elliot, ii. 278.

blossoming at Aleppo to the middle of February, gives an advance to the season in Palestine which must be understood in copying his statement that, “*The almond-tree* puts forth its blossoms about the middle of this month, being soon followed by the *apricot*, the *peach*, and the *plum*; and although other trees remain in their leafless state until the second week of March, those which are in blossom, together with the lively vegetation of the plants beneath, give a pleasing vernal appearance to the gardens.”<sup>a</sup> Now, the analogy of the almond-tree suggests that all this occurs early in February in Palestine.

The orange-trees on the plain of the coast are laden with ripe fruit.<sup>b</sup> And here it may be noted that no oranges can be finer than those of the Palestine coast. Volney observes that those of Tripoli are equal to those of Malta,<sup>c</sup> and Skinner,<sup>d</sup> that those of Jaffa are the finest in the world,—two forms of expression which mean the same thing.

**GRAIN.**—According to Russell, barley is sown this month in the Aleppo district.<sup>e</sup> In the country beyond Jordan, the ground having then been softened by recent rains, Buckingham saw the peasantry all abroad on the 1st of this month, either at the plough, or scattering the seed. “The labours of husbandry being already too much retarded by the late long drought to admit of an hour being lost.”<sup>f</sup> If so, these operations would naturally be referred to January. He does not say what grain they sowed. What Russell says of that district in another matter, is certainly true of Palestine;—the fields which were partly green before, are now, from the springing up of the later grain, covered with an agreeable verdure.<sup>g</sup> Accordingly, the rich green of the young corn, especially in the plains, is this month much spoken of by the travellers in Palestine. In the southern part of the plain of the coast, about Gaza, where the climate approximates to that of Egypt, Furer took notice, on the 9th, that the corn stood as high as it does in Germany in May or June.<sup>h</sup>

**ESCULENT VEGETABLES.**—*Beans* are still in flower. The *cauliflower* still ripens. Russell says that cauliflowers come into the Aleppo market about the end of January, and are common until the middle of March.<sup>i</sup>

**PLANTS.**—The same flowers which open in January, continue in bloom this month. Early in the month, in the plain of Sharon, Skinner<sup>k</sup> saw *lilies*<sup>l</sup> and *hyacinths* in every direction, and the verdant grass was strewed with the richest *scarlet poppies* he ever beheld.

Russell states that the banks of the streams near Aleppo are this month ornamented with *geraniums* and *daisies*. Myller<sup>m</sup> states that in the meadows of the same neighbourhood he saw *tulips*, *hyacinths*, *narcissuses*, and *anemones* in full bloom, amidst grass of the most beautiful green. Rauwolff<sup>n</sup> notices several sorts of *hyacinths* in flower, and among the first the oriental *hyacinths*, called by the natives *sumbel*. All this, without doubt, applies equally to Palestine, where the same plants grow, and where the season is rather more forward than at Aleppo.

## MARCH.

**WEATHER.**—The account which Dr. Russell gives of the weather at Aleppo in the month of March is, that a good deal of rain falls in the course of it; but it is generally in short, hard showers, and often accompanied with thunder, at which times the weather is dark and gloomy; but for the most part the sky is clear, and only variegated with light white clouds. It begins in this month to be hot in the open air. The winds blow fresher than in January and February, and are oftener westerly. The greatest height of the thermometer is 67°, and the least 44°; the greatest difference in any one day 9°. The morning station of the thermometer in the beginning of the month is 49°, about the middle of the month 52°, and towards the end 58°

<sup>a</sup> Russell, i. 64.

<sup>b</sup> Skinner, i. 185.

<sup>c</sup> Vol. i. p. 297.

<sup>d</sup> Vol. i. p. 184.

<sup>e</sup> Vol. i. p. 74.

<sup>f</sup> ‘Palestine,’ ii. 152.

<sup>g</sup> Vol. i. p. 64.

<sup>h</sup> ‘Itinerarium,’ p. 46.

<sup>i</sup> Vol. i. p. 91.

<sup>k</sup> Vol. i. p. 174.

<sup>l</sup> Doubtless the common white lily (*lilium candidum*), which, besides the comparatively rare Persian lily mentioned under last month, is the only one we know of as growing in Palestine.

<sup>m</sup> Reise, p. 648.

<sup>n</sup> Th. i. p. 115.

or 95°. In dark, wet weather, the difference between the morning and evening stations is very little.

Neither *snow* nor *frost* occurs in this notice : but our memoranda gives instances of both in Palestine. In the early part of the month Madox<sup>a</sup> found the nights frosty in the north of the country, about the head of the Jordan ; and in the east country, beyond the hills of Gilead, Buckingham found the whole land covered with thick hoar frost in the mornings, and the cold severe ; and on the 16th the hills east of the Haouran were still covered with snow.<sup>b</sup> Even at Jerusalem, as late as the 26th, Madox<sup>c</sup> experienced much rain and snow, even until about 1 o'clock P.M. On the 21st Burckhardt<sup>d</sup> found that the summit of Mount Barouk (one of, but far from the highest, of the Lebanon ridges) was covered with snow, and a thick fog rested on it, yet the next day he found that the heavy rains of the season had dissolved most of the snows on Anti-Lebanon. The same day (21st) it snowed in the great plain between Lebanon and Anti-Lebanon ; and as he says that it continued to rain and snow *for several days*, it must have snowed at the latter end of the month, as he reached that city the day after this observation was made.

The notices which we have collected of *rainy weather* in this month are so numerous, and so refer to *all* parts of the country—from uttermost Lebanon to the desert of Suez—as to show that the statement adduced from Russell is strictly applicable to this country ; and we shall not, therefore, multiply authorities in order to confirm it. Much rain falls, sometimes in torrents, by day and night, but chiefly by night ; and all that has been said before of inundated plains and hollows is strictly applicable to this month, as well as that the streams are in many cases swollen to deep and rapid rivers, dangerous to pass. The rain is often accompanied by hurricanes of wind ; and the sea is in consequence unusually stormy on the coast. The rains are oftener than in the preceding months attended by lightning and thunder ; and the sky is often much obscured and blackened by thick clouds.<sup>e</sup> In short, the spring rainy season, called in Scripture “ *the latter rain,*” falls principally in this month, the want of which is always spoken of as a great calamity to the husbandman. And this is still most true. We have mentioned, on more than one occasion, that the season in which Mr. Buckingham travelled had been one in which the customary rains of winter and early spring had not fallen ; and all his incidental statements, with reference to the effects, demonstrate that, as the prophet states, when, at this season, God “ rebuketh the sea and maketh it dry, and drieth up all the rivers, —Bashan languisheth, and Carmel, and the flower of Lebanon languisheth.”<sup>f</sup> Thus, under the date March 11, when in the Haouran, he remarks, “ At the period of our stay here we learnt that the late drought with which the plains had been afflicted had nearly produced a famine in particular parts of the country, and this was one in which it was severely felt. Corn, for instance, in this plain, which, in seasons of abundance, formed the granary for the whole of Syria, and was consequently cheaper than elsewhere, was now selling at three piastres, or more than half-a-crown sterling per gallon, which price was almost without precedent or example. From the entire absence of rain, all the pasture for cattle had also dried up, and the usual supplies of milk and butter were therefore equally deficient. Under this pressure of want and distress, innumerable families had migrated into the eastern hills among the Druses, and into the mountains near the Jordan, in both of which districts rain and snow had occasionally fallen ; while in the great plain of the Haouran, which separates these ranges of hills, there had been a continued drought for four months past, without the means of watering by irrigation, and, consequently, the soil, though naturally fertile, was, by this calamity, rendered, for the present, at least, quite unproductive.” On the other hand, the good effect of these rains appeared, the more marked by the contrast, in the eastern hills, where they had not been wanting. “ From the abundance of water obtainable here and the industrious habits of the Druses, the greater part of the good soil had been brought into cultivation,

<sup>a</sup> Vol. ii. p. 198.

<sup>b</sup> ‘ Arab Tribes,’ 97, 131, 227.

<sup>c</sup> Vol. ii. p. 216.

<sup>d</sup> ‘ Syria,’ 206, 208.

<sup>e</sup> The authorities on which the preceding statement is founded are :—Burckhardt ; Buckingham’s ‘ Arab Tribes,’ 122, 141 ; Skinner, i. 246, 261, 263, 264, 269, 271, 286, 290, 321 ; Madox, ii. 195, &c. ; Lindsay, ii. 150 ; Elliot, ii. 217, 278, 327, 347, 350 ; Wilde, ii. 108, 109, 424, &c.

<sup>f</sup> Nahum, i. 4.

and we had the gratification to see young corn spring up here already a foot in height, and of a beautiful fresh green colour, while the whole of the Haouran below was a dull brown; and from the prevalence of the late drought and want of rain, was at the present moment a parched desert."

Towards the end of this month, the rivers are in general much swollen, not merely by the rain, but by the thawing of the snows which have remained upon the mountains. There are separate testimonies concerning the swelling of each river.<sup>a</sup> And Maundrell,<sup>b</sup> and some other travellers, think that the Scriptural "swelling of Jordan" must be referred to this time.

With all this rain and its concomitants, there is much splendid weather in March; such, for instance, as enchanted Wilde<sup>c</sup> in the plain of Sharon (on the 15th).—"Around us was an atmosphere, such as can only be perceived and breathed in the East,—no palpable sky,—no clouds traversing a canopy definite in extent, but an ethereal expanse about us and above us, terminating only where the powers of vision fail, and creating the thought that we looked into the regions of boundless space."

There are various passages of Scripture, besides those already adduced, which obviously refer to the meteorology of the present and preceding months, that is, of winter and early spring. In the following, much of the force lies in the *connection* of the separate details:—"The Lord causeth the vapours to ascend from the ends of the earth; he maketh lightning for the rain; he bringeth the winds out of his treasures."<sup>d</sup>—"He giveth snow like wool; he scattereth the hoar frost like ashes. He casteth forth his ice like morsels. Who can stand before his cold? *He sendeth out his word and melteth them; he maketh the wind to blow, and the waters flow.*"<sup>e</sup>

Considerable heat is experienced this month in the more southern parts of Palestine, and in the plains along the Jordan, and (although in a less degree) along the plain of the sea. Travellers who have visited the Jordan at Easter (with the pilgrims) when that season fell in the month of March, speak much of the heat of the plain of Jericho. Egmont and Heyman<sup>f</sup> relate that several persons, being obliged to live in the open air, perished, on such an occasion, in this plain. And Prince Radzivil<sup>g</sup> mentions that those who go from Jericho to Jerusalem perceive the air to be much colder.

The *hot winds* begin to be felt very sensibly this month in Palestine and the desert to the south. In the desert of Suez, Lord Lindsay<sup>h</sup> experienced the *sirocco* (he erroneously calls it the *kamseen*) as early as the 6th. It was a southerly wind, bringing clouds of sand, and pelting the travellers with small pebbles, with the effect of a heavy hail-storm. At the end of the month (31st), Dr. Richardson,<sup>i</sup> in the westerly part of the same desert, that is, near the coast, travelled all day under a burning sirocco. He says, "We were afraid that the dreaded kamseen winds had set in; but our guide assured us, with the certainty of fate, that they would not commence for a fortnight." The suffering from heat and thirst was very great. Still earlier (25th) the sirocco was experienced in Palestine itself, upon the highest elevation of the hill country between Jerusalem and Ramla, by Dr. Wilde.<sup>k</sup> The statement of this traveller respecting this wind as felt in Palestine, is so much more clear than any other, that we feel constrained to introduce it, notwithstanding the general notice which has been taken of the subject in a previous page:—<sup>1</sup>

"While upon the highest elevation of the hill country, we had perceived a certain sultriness of the air. The wind was then blowing from the S.E., and on looking behind us, we could discover a peculiar haziness of the atmosphere, which momentarily approached towards us, while in front all was yet bright and distinct. Presently the sultriness increased, although the sun was not particularly hot, and there was rather more breeze than usual. In fact, this wind, which was no other than the sirocco, appeared to move as a stratum of the atmosphere, and for some time, even after it reached us, it did not descend and fill the valleys. The wind had been blowing from the S.E. for the two days previous, and it had, in all probability, been for some time traversing the hot and arid Idumean desert, where it met no particle of vege-

<sup>a</sup> Among others, Tschudis von Glarus, 236; Shaw, 238; Pococke, ii. 154; Egmont and Heyman, i. 335.

<sup>b</sup> Journey, 136.

<sup>c</sup> Vol. ii. p. 174.

<sup>d</sup> Psalm cxxxv. 7.

<sup>e</sup> Psalm cxlvii. 16—18.

<sup>f</sup> Vol. i. p. 333.

<sup>g</sup> Peregrination, 94.

<sup>h</sup> Vol. i. p. 250.

<sup>i</sup> Vol. ii. p. 181.

<sup>k</sup> Vol. ii. p. 42;—8.

<sup>1</sup> See p. cxliv., printed before Wilde's book appeared.



table life to modify its force; and where the sand, in all likelihood, had never cooled during the night. This wind also takes up, and holds suspended in it, the minutest particles of sand, which, in the space of a couple of hours we could perceive upon our clothes.

"We now began to feel its force, and its effect was most unpleasant, though difficult to describe. The air itself becomes a hot, thick, palpable haze, of a bluish-grey colour, rendering the outlines of objects indistinct, though it allows you to see much farther than in an ordinary humid mist. I know no better resemblance of the character the air assumes, under the circumstances, than that peculiar appearance and quivering motion which the heat and smoke of a fire has, when lighted in the open air of a clear hot sunny day. Although it may be blowing hard at the time, yet the breeze is unrefreshing, and comes hot and sultry on the brow, producing at first a feeling of oppression and constriction of the chest. This increases in time to a sickening sense of suffocation. There is a general dryness of the skin, the pores cease to throw out their secretions, the mouth becomes dry and parched, attended with urgent thirst; the vessels of the eyes red and tinged; head-ache and lassitude ensue. Finally, great prostration of strength is felt, which remains long after the exciting cause has ceased, and the other symptoms have been removed; and above all, there is the most debilitating effect produced upon the mind by this sirocco—a feeling of good-for-nothingness.

"This wind is one of the most trying things that awaits the invalid in his journeys through the Levant; and indeed it is trying to all, even the most healthy. The residents in those places subject to it shut themselves up in their houses during its continuance, and close all their doors and windows. Its action is generally modified towards evening, though it may continue for two or three days together. For this reason people who live in eastern countries seldom travel, if they can avoid it, during the heat of the day. The depressing effect of the sirocco may be that alluded to by the Psalmist as 'the arrow that flieth by day.'"

The traveller to whom we are indebted for the above was in Palestine from about the middle to the end of the month, and he has a few valuable remarks on its temperature and climate. He says that about two o'clock was about the hour at which the mercury stood highest, and frequently it was higher at 10 A.M. than at noon. He adds:—"Owing to the great difference of elevation in various parts of Palestine, the greatest dissimilarity prevails with regard to its temperature and climate. We were so fortunate as to visit it at the most favourable and healthy period of the year—the snows and cold of winter had just disappeared, and the rainy season had not yet commenced:—a month or three weeks earlier, we should have been travelling in some places with snow up to our horses' knees, while at the same time we should have been enduring a scorching sun overhead. The rainy season<sup>a</sup> in this country is very variable, both as to the quantity of rain which falls, and the period at which it occurs; it is however, on the average, generally from the middle of March to the middle of April."

**TREES AND SHRUBS.**—After the second week in March every tree is in full leaf.<sup>b</sup>

Travellers who have visited Palestine in this month take much notice of the prickly pear.



[Cactus Ficus Indicus.]

This plant, cherished in our English hot-houses in small pots, in Syria grows to the size of a large shrub, the stem of which is as thick as a man's body. A few of these planted together constitute an impervious hedge, universally adopted in the plain of the coast, in which and in Galilee it chiefly grows. The leaf is studded with thorns, and is of an oval shape, about ten inches long, six wide, and three-fourths of an inch thick; the stem and branches are formed by the amalgamation of a certain number of

<sup>a</sup> Meaning the season of spring rains—that is "the latter rains."

<sup>b</sup> Russell, i. 64.

these succulent leaves, that grow together the year after their first appearance, when each is laden with fifteen or twenty gaudy yellow blossoms, which are rapidly matured into a sweet and refreshing fruit of the size and shape of a hen's egg, becomes ripe towards the end of July, and is then sold in all the markets of the country.<sup>a</sup>

The *apricot* and *almond-trees* being in full bloom, crowned with their elegant wreaths of pink and white, give a peculiar beauty to the gardens of Damascus about the end of this month.<sup>b</sup> Sooner in the plains of Palestine.

The *apple* and *pear-trees* are also in blossom. So is the black-thorn, which has been little noticed by travellers in Palestine; but on the 15th Wilde<sup>c</sup> met with it, for the first time, in his travels, in the hill country about Beth-horon, and it was then in blossom.

The *Jericho plum-tree*, commonly called *Zacchoum*, because it grew formerly in the plain of Jericho, not far from the supposed house of Zaccheus, and supposed by the eastern Christians to be the tree which Zaccheus climbed to see the Saviour pass,—is said “to afford its fruit” towards the end of March or beginning of April. Nau<sup>d</sup> and Maundrell,<sup>e</sup> saw some on the trees about this time. A full and clear account of this tree and its fruit has been given by Mariti, of which the following is the substance:—The zacchoum has much resemblance to the plum-tree; its leaves are covered with thorns four or five inches long, the bark is knotty and shrivelled, green when it covers the tree, but turns yellow when dry. The wood is of the colour of box; and although not of so firm a texture, it will take the same polish and lustre. The leaves resemble those of the olive, but are straighter, more pointed, of a finer green, and almost prickly. The flower is white and fragrant. The fruit is a sort of large acorn without a calyx, inclosed in a kind of pellicle: this has little pulp, and is reduced almost to nothing when separated from the tree; but it contains a nut, the kernel of which contains an abundance of oily matter. This oil is obtained by pounding the whole fruit in a mortar, after which the murk is taken out and pressed (by the hands) until to all appearance quite dry; but on being boiled it affords a further quantity of oil, which is, however, much inferior to that obtained from the first operation.

The oil of zacchoum has the taste and colour of that from sweet-almonds; but it is difficult to clarify, as the manner of extracting it does not sufficiently separate the dregs. This oil is held in the highest esteem by the Arabs, who far prefer it to any other remedy, for internal contusions, as well as for sores and wounds; and Mariti seems to consider that its virtues are well attested. Quaresmius says that, within his own experience, the oil quickly allays the severest cholic. The Arab women often anoint themselves completely with it, under the impression that it had a salutary effect by closing the pores, and thus checking the excessive perspiration which the heat of the climate (in the plain of Jericho) occasions, and which they find to be very exhausting. Formerly, if not now, when the Christian caravan advanced towards Jericho, it used to be met by crowds of Arab women, offering the salutary oil for sale to the pilgrims, in small leather bottles. The demand for it being much greater than the supply, it used to be much adulterated by the mixture of olive oil. Hardy and others are certainly wrong in confounding this with the famous balsam of Jericho, since that was a medicinal gum obtained by incisions, whereas this is an expressed oil. Hardy says that a friend to whom he gave some of this oil (which he brought home with him) made experiment of its virtues, and found them “little less than miraculous.”<sup>f</sup>

*Orange* and *lemon-trees* are still covered with blossoms and fruit.<sup>g</sup>

The dwarf *oaks*, low woods of which cover the valleys and ravines in the hill country of Judea, put forth their young leaves, and long green cat-skins<sup>h</sup> about the middle of March.

The “tall waving *cypresses*” of the coast this month engage the attention of travellers, perhaps from the brighter green of its leaves at this season. The species in Palestine is the common one (*Cupressus sempervirens*). The Turks have retained the ideas and usages which

<sup>a</sup> Elliot, ii. 223. Clarke, iv. 133.

<sup>b</sup> Elliot, ii. 286.

<sup>c</sup> Vol. ii. p. 182.

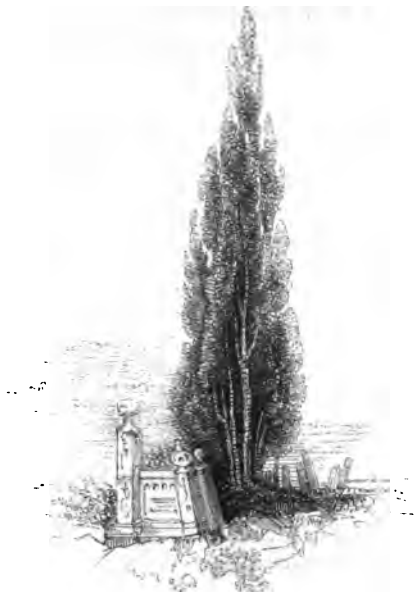
<sup>d</sup> Page 351.

<sup>e</sup> Page 144.

<sup>f</sup> See Mariti, tom. ii. chap. 23; see also D'Arvioux, ii. 188; Poccocke, ii. 49; Hasselquist, 287; Egmont and Heyman, i. 331; Hardy, 195.

<sup>g</sup> Wilde, ii. 171.

<sup>h</sup> Wilde, ii. 182.

[The Cypress.<sup>a</sup>]

the old Greeks, their predecessors, connected with this tree, and accordingly plant it in their cemeteries. The cypress is only once mentioned in the Scripture and once in the Apocrypha; but these allusions show that it was indigenous in Syria. Isaiah<sup>b</sup> mentions it among the trees whose wood was employed in the fabrication of idols, to which use it was doubtless recommended by the compact, heavy, and undecaying character of its wood. The other passage describes it as growing "upon the mountains of Hermon;"<sup>c</sup> which, if understood of the great Hermon, may be illustrated by the statement of Pococke, who says that the cypress is the only tree that grows towards the summit of Lebanon; but being checked by the cold, it does not there grow spirally, but like a small oak.

*The Date Palm* blossoms and is fructified about the end of this month or the beginning of the next. The flowers, adhering by very delicate membranes to the same pedicle, come out in very long bundles from the trunk between the leaves, and are covered by a spatha (or sheath) which opens and withers. The trees have male flowers on different plants from those which produce the fruit. Therefore, unless the flowers of the fruit-bearing (female) tree are impregnated from those of the male, the fruit is abortive. This fact has long been known and acted upon in the East by persons who had not the least notion of the sexual system of plants, of which system, as established by Linnæus, this has, therefore, afforded one of the most striking and popular proofs. Where the palm-tree is cultivated, the inhabitants do not trust to the spontaneous impregnation of the female trees from the male blossoms; but, at this time, when the sheaths, that respectively enclose the young clusters of the male flowers and female fruit, begin to open, at which time the latter are formed and the first are mealy, they take a sprig or two of the male cluster and introduce it into the sheath of the female; or else they take a whole cluster of the male, and sprinkle its meal or farina over several clusters of the female. The latter practice is common in Egypt, where the proportion of male trees is unusually numerous; but in Barbary and Arabia<sup>d</sup> the other method is resorted to, as, under it, one male tree suffices for four or five hundred date-bearing palms.

The palm-tree is an evergreen, which, to attain perfection, requires a hot climate, with a soil sandy, yet humid, and somewhat nitreous. Hence its favourite place is along the rivers which border the hot and sandy deserts, and beside old wells in the very heart of the desert itself; a circumstance which renders the distant prospect of it a delight to the wanderer in those parched regions, from the hope or assurance of water which it conveys. The trees found in the desert under such circumstances are supposed to have sprung up from date-stones thrown away by the travellers, who usually stop where water is found for refreshment and rest. Mariti<sup>e</sup> says that when it is newly planted, the natives surround its root with ashes and salt, to promote its growth and vigour, while they guard it carefully from all gross and putrid matters, which are, in the highest degree, discouraging to this tree. It is propagated chiefly from young shoots taken from the roots of full-grown trees, which, if well transplanted and taken care of, will yield their fruit in the sixth or seventh year; whereas those that are raised immediately from the kernel will not bear until their sixteenth. This method of raising the palm (*phœnix*), and what may be further observed, that when the old trunk dies, there is

<sup>a</sup> *Cupressus sempervirens (stricta)*.<sup>b</sup> Chap. xlv. v. 14.<sup>c</sup> Eccles. xxiv. 13.<sup>d</sup> We believe in Arabia generally; and we know, from actual observation, that it is so in Turkish Arabia.<sup>e</sup> Tom. ii. p. 315.

never wanting one or more of such offsprings to succeed it, may have given occasion to the fable of the bird of that name dying, and another rising from its ashes. But a more strict application of this fable results from the *alleged* fact that when a palm-tree has decayed, the Arabs cut it down to the roots and burn it on the spot, and the ashes being covered with a layer of earth, a new shoot springs up, which in the course of a few years becomes a strong tree. Although the palm has the reputation of being a slow-growing tree, Mariti says it grows to the height of a man in five or six years from its being planted; and this is a very rapid growth, considering that the trunk rises from the ground of a thickness which is never increased. It is one of the peculiarities of this class of trees that they rise to a great height without increasing in bulk. The same author reports the traditions of the natives respecting the extended life of this tree. They allege that it continues for many ages; and that, in fact, no one ever saw a well-rooted palm-tree perish, unless from the effect of a wound from some instrument, or some other external damage. But we have more confidence in the information of Dr. Shaw,<sup>a</sup> who was instructed that the palm-tree attains its greatest vigour about thirty years after transplantation, and continues so seventy years afterwards, bearing yearly fifteen or twenty clusters of dates, each of them weighing fifteen or twenty pounds. After this period it begins gradually to decline, and usually falls about the latter end of its second century. The tree needs no other culture and attendance than to be well watered once in four or five days, and to have a few of the lower branches lopped off, whenever they begin to droop or wither. These, whose stumps, or pollices, in being thus gradually left upon the trunk, serve, like so many rounds of a ladder, to climb up the tree, either to fecundate it, to lop it, or to gather the fruit, are quickly supplied by others, which, bearing gradually down from the top, or crown, contributes, not only to the uniform growth of this tall, knottless, and beautiful tree, but likewise to its perpetual and most delightful verdure. "To be exalted,"<sup>c</sup> or, "to flourish like the palm," are just and proper expressions applicable to the nature of this tree, as, "to spread abroad like the cedar."<sup>d</sup>

Respecting the history of this tree in Palestine, the following observations by Shaw<sup>e</sup> are too valuable to be omitted:—

"Several parts of the Holy Land, no less than of Idumea, that lay contiguous to it, are described by the ancients to abound with date-trees. Judea particularly is typified in several coins of Vespasian by a disconsolate woman sitting under a palm-tree. Upon the Greek coin likewise of his son Titus, struck upon a like occasion, we see a shield suspended upon a palm-tree with a Victory writing upon it. The same tree, upon a medal of Domitian, is made an emblem of Neapolis, formerly Sichem, or Naplōsa, as it is now called; as it is likewise of Sepphoris or Saffour, according to the



[The Date-Palm.<sup>b</sup>]



<sup>a</sup> Vol. i. p. 261.

<sup>b</sup> *Phoenix dactylifera*.

<sup>c</sup> Eccles. xxiv. 14.

<sup>d</sup> Psalm xc. i. 11.

<sup>e</sup> Vol. ii. p. 150.

present name, the metropolis of Galilee, upon one of Trajan's. It may be presumed, therefore, that the palm-tree was formerly very much cultivated in the Holy Land. There are, indeed, several of them at Jericho, where there is the convenience they require of being often watered, where likewise the climate is warm and the soil sandy, or such as they thrive and delight in. But at Jerusalem, Sichem, and other places to the northward, I rarely saw above two or three of them together; and even these, as their fruit rarely, if ever, comes to maturity, are of no further service than (like the palm-tree of Deborah) to shade the retreats of their sheikhs, as they might formerly have been sufficient to supply the solemn processions (such as is recorded in John xii. 13) with branches. From the present condition and quality, therefore, of the palm-trees, it is very probable (provided the climate and the sea-air should, contrary to experience, be favourable to their increase) that they could never be either numerous or fruitful. The opinion, then, that *Phœnice* is the same with a country of date-trees, does not appear probable; for, provided such an useful and beneficial plant had ever been cultivated here to advantage, it would have still continued to be kept up and propagated, as in Egypt and Barbary."

It appears to us that Shaw rather underrates the extent to which the palm was anciently cultivated in Palestine. Every circumstance which could tend to diminish their number has been in operation since that country was lost to the Hebrew nation. It is, however, remarkable, that even in the time of Moses, the plain of Jericho was the favourite locality of the palm-tree; and from the number of the trees which grew in and around the city of that name, it was called "the city of palm-trees."<sup>a</sup> No one would think of thus distinguishing a town or village in Egypt or Arabia, where the *absence* of palm-trees would be a distinction. The palm-tree was, therefore, doubtless at all times very much less common in Palestine than in Arabia or Egypt.

Reserving some notice of the fruit of this tree for the month in which it is produced, we

have next to notice slightly the *Doum-Palm*.<sup>b</sup> We confess we are not perfectly satisfied that Palestine affords specimens of this tree. But as the name *doum* occurs in a few travellers as that of a tree which they do not describe, the probability is that at least a few inferior specimens may be found. And, indeed, as it grows not only in Upper Egypt (seldom in the lower country), but in Arabia, and even so near as the Sinai peninsula,<sup>c</sup> we might expect to find some specimens in, at least, the plain of Jericho. However, we shall not occupy the reader with a tree concerning which we feel thus in doubt. It may suffice to point out a few of the most marked differences. Instead of one trunk without branches, the doum throws up two trunks, or, perhaps, more properly, branches at the same time from the soil. From each of these spring two branches, which also are frequently bifurcated higher up. The terminal branches are crowned with bundles of from twenty to thirty palm leaves from six to nine feet



[Doum-Palm.]

<sup>a</sup> Deut. xxxiv. 3.

<sup>b</sup> *Cucifera Thebaica*. It takes its common name from the Isle of Doum, in the Nile, which abounds in them, while its Latin name comes from Thebes, where it is also abundant.

<sup>c</sup> Burckhardt's, 'Syria,' 611.

in length. The fruit of the doum would seem from description to be not very different from that of the date-palm. The tree flowers (in Upper Egypt) in April. It is not necessary to aid its fecundation by bringing the male flowers to the female tree; as it is found that the pollen of the stamens, wafted in the air, sufficiently impregnates the ovaries. The wood is much more solid than that of the date-palm, and will even bear to be cut into planks, of which the doors are made in many villages of Upper Egypt.<sup>a</sup>

The *Carob-Tree* we are induced to notice this month, from the manner in which it is mentioned by Wilde (on the 15th), showing that its fruit had already been perfected. Being in the plain near Mount Carmel, this traveller noticed several splendid specimens of the carob-tree.<sup>b</sup> The husks, or legumes, were scattered on the ground, where some cattle had been eating them. They reminded him of the prodigal son, who “would fain have filled his belly with the husks that the swine did eat.” The expressed juice and also the pulp of the fruit is much esteemed in the East. This tree has had the name of St. John’s Bread and the Locust-tree, from an unquestionably erroneous notion, however taken up, that it furnished the Baptist with his food in the wilderness. The tree is an evergreen, and grows to a considerable size, affording in its season small flowers, of a dark purple colour, succeeded by a four-cornered, smooth, fleshy, and many-celled legume, of a sweetish taste, the shells of which, if not the whole legume, probably formed the husks which, although the food of swine, were viewed with desire by the hungry prodigal, in whose father’s house there were many hired servants.



[Carob-Tree. *Ceratonia Siliqua*.]

The *fig-tree* blossom this month, and frequently while the winter-fig is still on the tree. Shaw<sup>c</sup> observes that the fig-tree does not properly blossom, or send out flowers, as we render the Hebrew word תפוח *tiphrah* in Hab. iii. 17. They may rather be said to *shoot out their fruit*, which they do like so many buttons, with their flowers, imperfect as they are, inclosed within them. This shooting out of the fig-tree was considered by the old Jews as a sign that “summer was nigh at hand.”<sup>d</sup> As it was about the end of this month, or in the early part of the next, that our Saviour, at the time of the Passover, went to a fig-tree expecting to find fruit thereon, but finding leaves only, laid his ban upon it;<sup>e</sup> it may be proper to remind the reader that the fruit appears *before* the leaves, and



[Fig-tree.]

<sup>a</sup> The best account of the Doum-palm which we have met with is M. Delisle’s ‘Description du Palmier Doum,’ from which the above facts relating to it are taken.

<sup>b</sup> *Ceratonia Siliqua*.

<sup>c</sup> Vol. i. p. 265.

<sup>d</sup> Luke xxi. 29, 30.

<sup>e</sup> Mark xi. 12–14.

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<sup>b</sup> *Ceratonia Siliqua*.

<sup>c</sup> Vol. i. p. 265.

<sup>d</sup> Luke xxi. 29, 30.

<sup>e</sup> Mark xi. 12–14.

that to see a tree in leaf, while *the season for gathering the figs as ripe* had not yet arrived, rendered it a reasonable expectation to find fruit on it; and this it must have had, if it had not been barren. It is well known, even in this country, where the natural habits of the tree are studied to disadvantage, that if our common fig-trees have no young fruit on them in March or April, they can produce none that year. The fact is, that the tree in its native climes affords three crops of figs, which it is necessary to distinguish:—First, there is the *boccore* or *early fig*, called in Scripture *the first ripe fig*.<sup>a</sup> This is far from being ripe at the end of March, for its time of ripeness is not until the middle of June. Hence it was not the time of ripe figs. “However,” says Shaw, “it frequently happens in Barbary, and we need not doubt of the like in this hotter climate, that according to the quality of the preceding season, some of the more forward and vigorous trees will yield a few ripe figs six weeks or more before the full season.” And he might have gone farther than this, for in May they have at Naples figs brought from the Levant, and called *fici di Pascha*, “Easter figs,” and which, from the time at which they reach that place, must have been ripe on the tree, as the name imports, about the time of the Passover. Shaw goes on to report that “when the *boccore* draws nearer to perfection, then the *kermouse*, the summer fig, or *carica* (the same that are preserved) begin to be formed, although they rarely ripen before August, at which time there appears a third crop, or the winter fig, as we may call it. This is usually of a much longer shape and darker complexion than the *kermouse*, hanging and ripening upon the tree even after the leaves are shed; and provided the winter proves mild and temperate, is gathered as a delicious morsel in the spring.” From this statement it appears that the figs of any two crops may be seen on the tree at once, the ripe or ripening fruit of the present crop, and the young fruit of that which is to succeed; and since the fruit of these prolific trees always precede the leaves, any one, who, at this time of the year should see a fig-tree in full vigour of leaf, would be justified in expecting to find some forward *boccores*, if not some winter figs likewise, upon it. The fig-tree will require some further notice under a future month.

Lord Lindsay,<sup>b</sup> travelling in the middle of this month in the valleys of Sinai, remarks:—“The *rattam*, a species of broom, bearing a white flower delicately streaked with purple, afforded me frequent shelter from the sun while in advance of the caravan.” This *rattam* is the white single-seeded broom,<sup>c</sup> and the native word is the same as that Hebrew word which is translated “juniper” in our version of the Bible.<sup>d</sup> Celsus,<sup>e</sup> with good reason, conceives that a species of broom is intended; and if so, *this* is, without doubt, the precise species. It is a remarkable, because undesigned, coincidence, that it was in travelling to the very same Mount of Horeb that the prophet Elijah rested, as did Lord Lindsay, under a *rattam*-shrub. Some refer the native name not to this species, but to the Spanish broom;<sup>f</sup> but as the Arabs do not so nicely as ourselves discriminate the varieties of plants in which they have no particular interest, it is probable that they do, and that the ancient Hebrews did, apply the word as a generic name answering to *broom*, without distinguishing species or varieties. However, Palestine possesses *both* the species which have been named, and also the thorny broom,<sup>g</sup> which grows chiefly about the mountains of Lebanon, and the sand-broom,<sup>h</sup> which is common to the Arabian deserts and southern Palestine.

In the same journey towards Sinai Lord Lindsay noticed “two other shrubs, the *sellah*, thorny, with leaves of the lightest tint of green, bearing a very pretty flower, of a light pink colour, beautifully streaked inside,—and the *ooraga*, deep green, with hairy pods, ending each in a thorn, instead of leaves, and bearing a small pink flower, five petals with yellow stamina, delighted me with their simple beauty.” The first of these is a large species of *burnias*; of the other we know not the botanical synonyme, and suspect that the native name is not rightly spelt.

THE VINE.—This month the dead branches are cut away from the vines.<sup>i</sup>

<sup>a</sup> בכירה *bakirah*, Jer. xxiv. 2; Hos. ix. 10; the name is essentially the same that it now bears.

<sup>b</sup> Vol. i. 283.

<sup>c</sup> *Spartium monospermum*, for which identification the authority is Delisle's 'Flora Egyptiacus.

<sup>d</sup> 1 Kings xix. 4, 5; Job xxx. 4; Psalm cxx. 4.

<sup>e</sup> Hierobotanicon, i. 247.

<sup>f</sup> *Spartium junceum*.

<sup>g</sup> *Spartium spinosum*.

<sup>h</sup> *Spartium arenosum*.

<sup>i</sup> Brocard, p. 332.

**GRAIN.**—In Judea and Samaria corn ripens sooner than in the northern parts of Palestine ; and in the plains of the Jordan all kinds of grain as well as fruits are more forward than in any other parts of the land. Everything is ripe in the plain of Jericho a fortnight sooner than at Jerusalem.<sup>a</sup> Shaw<sup>b</sup> goes farther, and intimates that corn is as forward on the plain of Jericho as it is in even the plain of Acre a fortnight after. This is a valuable fact, as being almost the only one we possess for a comparative estimate of the plains of the sea and of the river. About the middle of the month (15th) Wilde<sup>c</sup> observed, in the plain of the coast, between Jaffa and Ramla, that the corn (wheat) was about a foot high, and looked most luxuriant. Various other travellers this month notice corn as being in a very forward state, without describing the precise condition of its progress. In the comparatively high country about Adjeloon in Gilead, the young corn had only begun to appear above ground in the early part (8th) of March. According to Niebuhr<sup>d</sup> *barley* is ripe about Jerusalem at the end of this month, while that of the later crop has only lately been sown. At Damascus (on the 14th) Skinner<sup>e</sup> notices that the plain was sown all over with barley ; and adds that there the grain is kept for some time under water as rice is, and low embankments of mud divide the plots, which receive their allowance of water alternately. This and other processes of irrigation will shortly receive from us the notice and illustration they require. Buckingham<sup>f</sup> (on the 16th) noticed persons engaged in ploughing in the Haouran for the purpose of sowing corn ; and to impress upon the mind of the reader the connection in such simultaneous notices of ploughing, sowing, and ripe corn, his attention should be recalled to the general statements which have already been given in this matter from Russell and Volney. To which we will here add the conclusive authority of the Jewish writers themselves, who state that wheat and spelt, “the lateward seed,” which lie long in the earth, and do not ripen soon, were sown from the middle of Tizri to the middle of Chisleu, that is, in October, November, and December. But “the early seed,” the barley which soon ripens, was sown in the months Shebat and Adar, or in January (part), February, and March (part). This might, at the first view, seem to contradict the statement of Volney, or at least might intimate that the present practice is different from that which was anciently followed. And the liability of this inference would show the danger of trusting to isolated passages ; for on closer inquiry, we shall learn, with respect to barley, that it was not only thus sown in late winter and early spring, but *also*, like wheat, in late autumn and early winter,—the operation of sowing being, in fact, only suspended in the very depth of winter, and resumed again as soon as the severity of that season has subsided. That barley was sown early in November, and again in spring by those who thought proper, is, in another place,<sup>g</sup> affirmed by the very same authority from which the preceding statement is adduced. Thus, therefore, excepting a short interval of dead winter, the times of sowing, taking wheat and barley together, may be said to extend over half the year, namely, from the latter end of September to the early part of March ; and, by consequence, the time of harvest extended over the other six months ; for, from the difference of localities, and of times of sowing, the barley-harvest commenced in some places as early as March, while in other places the wheat-harvest was not over till October.<sup>h</sup> With respect to barley, in particular, it may hence be said that the Hebrews had two crops, one sown in the autumn, and the other in spring, as is still the case in the same country and in the same parts of southern Europe. It does not appear that the seed sown in the former season was generally returned to the garner sooner than that sown in the beginning of the latter season ; for it is clear that the Jews expected to be able to obtain the Paschal first-fruits of barley harvest from seed sown only seventy days before that festival.<sup>i</sup> This, to some of our readers, may seem a prodigiously rapid growth, but in our own agriculture there are sorts of barley<sup>k</sup> which become ripe in less time than this, even in nine weeks after being sown.

**ESCULENT VEGETABLES.**—It appears that, to a considerable extent, the products, and seasons for them, in Algiers and Tunis, correspond to those of Palestine ; and incidental

<sup>a</sup> Peregrinatio, '98

<sup>b</sup> Vol. ii. p. 137.

<sup>c</sup> Vol. ii. 177.

<sup>d</sup> Beschreibung von Arabien, p. 160.

<sup>e</sup> Vol. i. p. 320.

<sup>f</sup> Arab Tribes, p. 226.

<sup>g</sup> T. Bab. Berach. fol. 18—2.

<sup>h</sup> Lightfoot, Heb. and Talm. Exercit. upon St. Matt. xii. 1.

<sup>i</sup> Mennoth, fol. 85. i.

<sup>k</sup> As the rash-ripe sort.



corroborations show that we shall not err in the few occasional illustrations which, in the absence of more direct information, we may occasionally seek from those countries. These will be very few. From this source, then, it would seem, that peas blossom early in March. At the same time beans are usually full-podded, and continue to the end of spring.<sup>a</sup> Correspondingly, Archbishop Baldric<sup>b</sup> states that new beans are gathered towards the end of this month at Tripoli; and an anonymous writer in the 'Gesta Dei per Francos'<sup>c</sup> mentions his having eaten them at Acre towards the end of this month. *Celery*<sup>d</sup> sown in July is now in a condition to be gathered,<sup>e</sup> and the *cauliflower* has reached its full size and perfection. We should not like, without distinct authority, to apply to Palestine Shaw's statement,<sup>f</sup> that in northern Africa he had seen several cauliflowers, very white, solid, and compact, that measured a yard or more in circumference.

**PLANTS.**—We shall here set down the names of such plants as, being noticed by travellers this month, may be supposed to be then in their most flourishing condition. But they are, for the most part, named without reference to their precise state, as to bloom or fruit, and we have not deemed it proper to supply the omission by a reference to their periods in *other* countries. But, from their attracting special notice in this month, we presume that a large proportion of them were in bloom:—

In the beginning of the month Shaw<sup>g</sup> took notice, on the mountains of Quarantania, of *yellow poley*, *thyme*, *sage*, and *rosemary*. In a preceding page (142) he ascribes these and "other aromatic plants of the like nature" to the mountains of Judea. We may, therefore, mention that, together with these, Mariti<sup>h</sup> ascribes *rue*, *lavender*, *hyssop*, and *parsley*, to Mount Carmel. Of the plants thus named, *rue* is of some interest from the notice taken of it in Scripture.<sup>i</sup> It grows spontaneously in Palestine,<sup>k</sup> particularly on or about mountains. Hasselquist<sup>l</sup> saw it on Mount Tabor. The species seems to be the common one.<sup>m</sup> One hardly knows what to make of the story told by Josephus<sup>n</sup> of a wonderful sort of rue that grew within the castle-palace of Machærus, built by Herod, and which was not inferior to a fig-tree in height and thickness, and which had remained there ever since the time of Herod. There are certainly some species of rue which grow to a much larger size than the common sort, but none to explain this statement. The *hyssop*, which has been named, is doubtless the common sort,<sup>o</sup> which is said to grow abundantly in the mountains around Jerusalem. But whether it is the same plant which is so often mentioned in the Hebrew Scriptures, has much been questioned, and must ever remain doubtful.<sup>p</sup> The *hyssop* (*ezob*) mentioned in the sacred books was much used under the law as a sprinkler in the rites of purification; and Solomon, in his lost work on botany, is said to have described plants from "the cedar of Lebanon to the *hyssop* that springeth out of the wall."<sup>q</sup> The common *hyssop* is a shrubby plant, growing to about eighteen inches high, and has an aromatic smell and warm bitterish taste. Its flowers are blue, varying to white and red.

Also, in the early part of this month, Pococke<sup>r</sup> took notice, near Rama, of the *artichoke*, *fennel*, and *sand-thistle*, besides anemones and tulips, which have been observed in preceding months. Of *artichokes*, Morison<sup>s</sup> also took notice, about the same time, about Mount Tabor, and observes that, although wild, they were to the full as fine and large as those which were in France cultivated with so much care in gardens. We suppose they are the same that Burckhardt noticed in the same neighbourhood later in the year (June 26th). "The plain (below Mount Tabor) was covered with the wild artichoke, called *khob*; it bears a thorny violet-coloured flower, in the shape of an artichoke, upon a stem five feet in height.<sup>t</sup> *Fennel* seems widely

<sup>a</sup> Shaw, i. 256.

<sup>b</sup> 'Gesta Dei per Francos,' 129.

<sup>c</sup> In the Memoir, in that useful collection, which bears the title of *Gesta Francorum et aliorum Hierosolymitanorum*.

<sup>d</sup> *Apium graveolens*.

<sup>e</sup> Shaw, i. 259.

<sup>f</sup> *Ibid.*

<sup>g</sup> Vol. ii. p. 147.

<sup>h</sup> Tom. ii. p. 124.

<sup>i</sup> Luke, xi. 42.

<sup>k</sup> Brocard, 92.

<sup>l</sup> Page 261.

<sup>m</sup> *Ruta graveolens*.

<sup>n</sup> De Bello, vii. 6. 3.

<sup>o</sup> *Hyssopus officinalis*.

<sup>p</sup> Celsius has a long and curious paper on the subject in his 'Hierobotanicon,' pars. ii. p. 407—448.

<sup>q</sup> 1 Kings, iv. 33. See also Exod. xii. 22; Lev. xiv. 4, 6, 49, 51, 52; Num. xix. 6. 18; Palm li. 7; Matt. xxvii. 48.

<sup>r</sup> Vol. ii. p. 8.

<sup>s</sup> Liv. ii. chap. 8.

<sup>t</sup> 'Syria,' 333.

spread over the country. Rauwolff<sup>a</sup> notices it near Tripoli, and Burckhardt<sup>b</sup> in the defiles of Sinai, where it was three or four feet high in May. The Bedouins eat the stalks raw, and pretend that it cools the blood.

The following list of plants from Russell<sup>c</sup> (with a few from others) appears to belong to this month. It may, doubtless, with little exception, be equally referred to Palestine, especially as hardly any species is named which is not also found in Palestine:—

“As spring advances,” says Russell, “the following come in with surprising rapidity:—Madder; clivers; plantain; androsace; burnet; veronica, many varieties; wake-robin, several species; several kinds of toad flax; wild clary; garden clary, various species; spring-flowering cyclamen,<sup>d</sup> which near Aleppo is chiefly cultivated in the small gardens, but is very common in the mountains; stock gilliflower, various; three species of charlock; field mithridate mustard; bastard mithridate mustard; dame’s violet, various; wild raddish; chickweed, two species; mouse-ear, four species; house-leek, caltrops; hartwort; shepherd’s needle; clove gilliflower; garlic, various; large silvery convolvulus; spurges, various; horehound; field-basil; treacle-mustard; wild-woad; hemlock; water parsnip; navel wort; brank-ursine; gold of pleasure; flickweed; horned wild cumin; oriental sweet fern; \* bastard-parsley, various; oriental shrub hartwort; scorching carrot; asphodel; broom.<sup>f</sup>”

There are but few in the above list of plants which need particular observation. The first of these is—

*Flax*, of which Palestine has the common,<sup>g</sup> the hairy,<sup>h</sup> and the knotted<sup>i</sup> species. The two first, but not the last, grow in Egypt also.<sup>k</sup> On Scriptural authority<sup>l</sup> we know that the flax was “bolled” (had risen in its stalk), at the time when barley was in the ear, and wheat in blade; some time in the month of March, it would seem. The fact is that flax is in Egypt sown at the autumnal equinox, and gathered at the end of March.<sup>m</sup> And so, in Palestine, when early in April, at the time of barley harvest<sup>n</sup> the Jewish spies were received by Rahab in Jericho, she concealed among or under the stalks of flax, which had been laid out upon the housetop to dry,<sup>o</sup> which shows that it had been quite recently gathered. It is at this day the custom (in Egypt) to expose the flax, in stalk, to the sun to dry, for twelve or fifteen days after it is gathered.<sup>p</sup> By comparing the several passages of Scripture in which *flax* is mentioned,<sup>q</sup> we shall find the amount to be, that flax was cultivated to a considerable extent in Palestine; that garments made of it were worn, not only by the priests and Levites, but very largely by the people. The coarser linen cloths were manufactured at home by the women, but the finer were imported from Egypt, the ancient celebrity of which country for its linen fabrics is abundantly confirmed in Scripture. Strings made of flax are mentioned, and the beautiful allusion to the “quenching the smoking flax” is explained by the fact that the Hebrews used flax for wicks to their lamps. We cannot find that flax is now much cultivated in Palestine, although considerable attention is paid to the culture of *cotton*. It may be that the soil and climate are less suited than that of Egypt to its production. But there is not, on any ground, the least pretence for the strange assertion of Reynier,<sup>r</sup> that the law which obliged the priesthood to be clad in linen garments imposed on them an onerous obligation.

The mention of two species of *arum* in the above list gives us occasion to notice that seven or eight species of this genus have been observed in Palestine, chiefly by Rauwolff and Hasselquist. These are *Arum maculata*, *A. bysantinum*, *A. ovidue*,<sup>s</sup> *A. colocasia*, *A. arisarum*, *A. tenuifolium*, *A. dracunculus*, *A. triphyllum*. Most of these blossom in April and May; but few have much beauty to recommend them. In most of the *Arums* the root, although highly acrimonious in its raw state, becomes, when dressed, both palatable and nutritious.

<sup>a</sup> Page 21.

<sup>b</sup> ‘Syria,’ 333.

<sup>c</sup> First edition, p. 33—35.

<sup>d</sup> See also in Maundrell, p. 8. See also Clarke, iv. 175.

<sup>e</sup> Maundrell, l. c.

<sup>f</sup> These two last by Thevenot, between Sidon and Labatia, ‘Travels,’ pt. ii. p. 11.

<sup>g</sup> *Linum usitatissimum*.

<sup>h</sup> *L. hirsutum*.

<sup>i</sup> *L. sodiflorum*.

<sup>k</sup> Delisle, Flore Egyptiac, Nos. 362, 363.

<sup>l</sup> Exod. ix. 31.

<sup>m</sup> ‘Mémoire sur l’Agriculture de l’Egypte,’ par M. P. S. Girard, p. 100.

<sup>n</sup> Josh. iii. 14.

<sup>o</sup> Josh. ii. 6.

<sup>p</sup> Girard, Memoire, &c. 101.

<sup>q</sup> Exod. ix. 31; Lev. xliii. 47, 48, 52, 59; Deut. xxii. 11; Josh. ii. 6; Jud. xv. 14; Prov. xxxi. 13; Isa. i. 31; xix. 9; xliiii. 67; Jer. xlii. 1; Ezek. xl. 3; xliiv. 17, 18; Hos. ii. 5, 9; Matt. xii. 20; Rev. xv. 6.

<sup>r</sup> ‘De l’Economie Publique et Rurale des Arabes et des Juifs,’ p. 433.

<sup>s</sup> Which is often wanting in modern lists. It is founded on Rauwolff’s statement, that among other species of *Arum* “they have a strange one, with long ears, wherefore they call it in their language *Ovidue*.” p. 104.

This is known in Palestine, where one species, *A. colocasia*, or the Egyptian arum, is extensively cultivated on this account. Rauwolf, when near Tripoli, describes it as much cultivated in that neighbourhood, and as being very common, and sold all the year round. He also found them growing wild about rivulets; but could never see either flowers or seed on them. So, also, afterwards, near Aleppo, he says, that they there "plant colocasia in such plenty as we do turnips, whereof they have also great plenty."<sup>a</sup> This plant has a tuberous, thick, large, oblong root, rounded at the base. Its leaves resemble, in form and size, those of the water-lily. It is in the East esteemed a wholesome, though not a very delicate food. The roots and petioles are boiled for eating; and the leaves, when young, are sometimes eaten raw. It will be remembered that it was in Palestine, at the mouth of the river Belus, that Hercules is said to have found the plant *colocasia* which effected the cure of his wounds.<sup>b</sup>

In like manner the notice of garlicks, &c., makes it convenient to notice that the Hebrews in their own country could not want "the onions, the leeks, and the garlick, which they did eat in Egypt freely,"<sup>c</sup> and the lack of which was regarded by them with so much regret in the Wilderness. All the more useful and common species of *allium* grow in Palestine.<sup>d</sup> The paintings of ancient Egypt confirm the Scriptural account of the profuse use of the edible species of *allium* in Egypt. And the Jews, in their own land, probably did not use them to an equal extent; it is clear that they possessed them, and in the highest degree probable that they consumed them largely. Indeed, all the Orientals, and especially the modern Egyptians and Arabians are passionately fond of these vegetables, particularly onions. With reference to the *allium cepa* (onion), called by the Arabs *basal*, Hasselquist<sup>e</sup> observes that this was doubtless one of the species of onions for which the Israelites longed (and which they afterwards possessed in Palestine). We may guess this, he says, by the quantity to this day used in Egypt, and by their goodness in that country. "Whoever has tasted onions in Egypt must allow that none can be better in any part of the universe. Here they are sweet; in other countries they are nauseous and strong: here they are soft, whereas in the north and other parts they are hard, and the coats so compact that they are difficult of digestion. Hence they cannot in any place be eaten with less prejudice and more satisfaction than in Egypt. They eat them roasted, cut into four pieces, with some bits of roasted meat, which the Turks in Egypt call *kebab*; and with this dish they are so much delighted, that I have heard them wish they might enjoy it in Paradise. They likewise make a soup of them in Egypt, cutting the onions into small pieces; this I think one of the best dishes I ever ate." They are also eaten raw.

The same writer,<sup>f</sup> with reference to the *allium porrum* (leek), observes—"This was certainly one of those desired by the children of Israel, as it has been cultivated from the earliest times to the present in Egypt. The seasons for this are the winter and spring months. The inhabitants are very fond of it, eating it raw as sauce for their roast meat; the poor people eat it raw with bread, especially for breakfast, and would scarcely exchange their leeks and bit of bread for a royal dinner."

*Cumin*,<sup>g</sup> also mentioned in the above list, was cultivated by the ancient Hebrews, as evinced by the fact that the Pharisees, with a strictness beyond what the law required, paid tithe upon it, in common with mint, rue, and anise.<sup>h</sup> Indeed, we are informed by the prophet<sup>i</sup> that it was cultivated even before the Captivity, and threshed out with a rod, which was not the ordinary mode of threshing among the Hebrews. In the island of Malta, where it is cultivated largely, the seeds are detached in the same manner. It is for the sake of these seeds that the plant is cultivated. They are esteemed highly stomachic, and are put in cheese and in bread; and an essential oil is obtained from them by distillation. They have a warm, bitterish taste, accompanied with an aromatic flavour, which many persons do not consider agreeable. The umbelliferous plant has some likeness to fennel, but is smaller. In the east

<sup>a</sup> Rauwolf, 21. 65.

<sup>b</sup> Clarke, iv. 125.

<sup>c</sup> Num. xi. 5.

<sup>d</sup> Namely:—*A. sativum*, the cultivated garlick; *A. porrum*, the common leek; *A. cepa*, the common onion; *A. ascalonicum*, the shallot, which Hasselquist found native in Palestine; *A. sub-hirsutum*, hairy garlick, or *Dioscorides*, moly; *A. moschatum*, musk-smelling garlick; *A. pallens*, pale flowered garlick; *A. paniculatum*, panicle garlick.

<sup>e</sup> Page 290.

<sup>f</sup> Page 291.

<sup>g</sup> *Cuminum cymium*.

<sup>h</sup> Matt. xxiii. 23.

<sup>i</sup> Isa. xxviii. 25, 27

it rises to nine or ten inches high, but seldom exceeds six inches in Europe. The *anise*, which is named along with it in the two Scriptural texts cited above, we take to be really *anise*—that is, that the word is rightly rendered in our version—and not *dill*, as some suppose. Most people who cultivate both, name them together, as being closely allied. Thus the Maltese call cumin, *cumino aigro*, hot cumin; while they give the name of *cumino dolce* (sweet cumin) to anise.

About the middle of this month, in the plain of Sharon, Mr. Wilde <sup>a</sup> remarks, “ the fields were decked with thousands of gay flowers; the *scarlet anemone*, and a beautiful specimen of *small red tulip*, intermingled with the *white asters*, the *pink phlox*, and the *blue iris*, and with crimson and white *asters*, *asphodels*, and *lilies*, forming an enamelled carpet that perfumed the air, and offered a scene replete with everything that could gratify the eye or charm the imagination.

APRIL.

THE WEATHER.—During the month of April the sky is described by Dr. Russell <sup>b</sup> as being generally clear, although sometimes variegated with light white clouds. It is seldom overcast or gloomy, except when it rains, which it does in hard thunder showers, as in the last month, but not so often. There are commonly a few days of close hazy weather, accompanied with light northerly or easterly breezes; but the winds in general are fresh westerly. The mornings and the evenings hitherto remain cool; but the weather in the day begins to grow hot. The greatest height of the thermometer is eighty-two degrees, the least fifty-six degrees; and the greatest difference in any one day ten degrees. The morning station of the mercury increases gradually from sixty to sixty-six degrees as the month advances. The difference of height between the morning and afternoon is usually eight or ten degrees. The same writer, in another place, <sup>c</sup> says,—“ In April the spring hastens rapidly forward; the sky is more constantly clear, and, the sun shining out with increased power, the intervening showers prove not less grateful to the senses than refreshing to vegetation.”

In this month, and for Palestine itself, we possess the advantage of an almost daily registration of the thermometer, kept by Mr. Turner. <sup>d</sup> This will amply justify the illustrations we have derived from the natural history of Aleppo. For, by comparison, it will appear that the points of extreme heat and cold, and consequently the difference between these points, is nearly the same in both instances. Thus the highest point in Dr. Russell’s registration is 82°, the highest in Turner’s 81½°, and the lowest in Russell’s is 56°, in Turner’s 53°. The difference of extreme points at Aleppo is 26°, in Palestine 28½°. It is true that there is a point as high as 86° and as low as 47° in Turner’s register; but as the former was *in the water* of the Lake of Tiberias, and the latter at midnight, the items, although valuable, cannot enter into the comparison with the ordinary *day* temperature at Aleppo.

We have digested the dispersed notices into a table, which is subjoined. By a comparison of the several entries the reader will derive much instruction respecting the different temperature of different parts of the country, and in the same neighbourhoods in different times of the day:—

Day.	Therm.	Time.	Place.	Day.	Therm.	Time.	Place.	Day.	Therm.	Time.	Place.
1	60°	10 P.M.	North of Sidon	14	54°	6 P.M.	Nazareth <sup>e</sup>	19	80°	2½ P.M.	Lake Tiberias,
2	58	Noon	Sidon	15	62	Noon	Nazareth				in the plain
3	53	Noon	Sidon	16	64	Noon	Nazareth	20	74	Noon	Nuzareth
—	47	Midnight	Sidon	17	67	Noon	Nazareth	21	77	Noon	Nazareth
4	68	Noon	Sidon	18	64½	10 A.M.	Top of Mount	22	Missed		
5	61	9½ P.M.	Tyre				Tabor	23	Mis-ed		
6	63	Noon	Tyre	—	71	11 A.M.	Foot of ditto	24	76	Noon	Jerusalem
7	64	5½ P.M.	Acre	—	71	1½ P.M.	Between Mount	25	79	Noon	Jerusalem
8	67	Noon	Acre				Tabor and	26	68	4½ P.M.	Jerusalem
9	66	Noon	Acre				Tiberias	27	61	Sunset	Jerusalem
10	69	2½ P.M.	Kalfah	19	86	11 A.M.	Lake Tiberias,	28	69	Noon	Jerusalem
11	Missed						in the water	29	61	4 P.M.	Jerusalem
12	67	Noon	Acre	—	81½	1½ P.M.	Do. up the bordering hills <sup>f</sup>	30	67	Noon	Jerusalem
13	66	Noon	Acre								

<sup>a</sup> Vol. ii. p. 172.    <sup>b</sup> Vol. ii. p. 283.    <sup>c</sup> Vol. i. p. 66.    <sup>d</sup> ‘Tour in the Levant,’ 1820. The year of Travel was 1815.

<sup>e</sup> Here Turner remarks, “As Nazareth stands very high, the thermometer here is only for the village. Coming from Acre in the morning, I felt the heat oppressive; but in the mountains I felt a great change.”

<sup>f</sup> In a sort of enclosed situation, where the mountains excluded every breath of air, the sun being burning hot. Rate taken in the shade. All these rates strikingly evince that higher temperature of the central basin of Jordan and its lakes, which we have often noticed. Turner says of this day, —“To-day the sun was burning hot, with a siroc wind.”

In Lebanon, deep *snow* not only remains on the highest summits at the end of this month, but even on the secondary heights, although the heat by day is equal to that of our English summer.<sup>a</sup> And at the end (29th) of the same month, Buckingham notes that the summits of Lebanon were whitened by a fresh fall of snow.<sup>b</sup> It rained the same day, and the wind blew from the south-west.

The same traveller<sup>c</sup> had experienced much *tempestuous weather* in the early part (8th and 9th) of the month, strong winds, accompanied by violent rains and hail. The thermometer stood at daylight at thirty-six degrees in the open air. But this was in a northern and elevated situation, upon the mountains above the valley of Hasbeya.<sup>d</sup> Much stormy weather occurs along the coast in the early part of the month. D'Arvieux<sup>e</sup> experienced this in his voyage from Damietta to Sidon, the wind then blowing from the north-west; and this gives him occasion to report the opinion of the natives that the week before Easter never passes without tempests. The superstitious association which is involved in this could not have arisen, had not tempestuous weather been frequent about that time.

It is clear that what are called in Scripture "the latter rains," are not very regular in their time. Some, as we have seen, place them in March, but Korte,<sup>f</sup> alleges that they occur in April and the beginning of May; with whom Shaw<sup>g</sup> nearly concurs, as he says that they either fall about the end of April, or the middle of May. Certain it is that we find travellers mentioning rain at intervals, from one end of the month to the other. Thus we find, on the 6th, clouds and rain after fine weather, near Ramla;<sup>h</sup> on the 8th and 9th heavy rains near the sources of the Jordan;<sup>i</sup> on the 12th, unmerciful rain near Ramla;<sup>k</sup> on the 17th Thevenot<sup>l</sup> experienced continued rain between Jerusalem and Jericho. On the 25th, leaving Nazareth, Della Valle,<sup>m</sup> had slight rain; it recommenced a few days after, and the sky was cloudy. Buckingham<sup>n</sup> reports rain on the 29th, in the great valley of Baalbec. It seems that, at least in the early part of the month, the air is chilly when it rains.<sup>o</sup> The mornings are sometimes *hazy*, even when the weather is fine. Thus Dr. Richardson,<sup>p</sup> travelling in the south-west, between Gaza and Ashdod, notes, on the 8th, that the morning was hazy, but the air extremely delightful, and the sun, half emerging, threw a softened light upon hill and plain. A thick *dew* lay upon the tender herb and the new-blown flowers. There is so much fine weather, in proportion to the rain, that there is not perhaps a more agreeable time for travel in Palestine. Elliot,<sup>q</sup> indeed, expatiates upon the delightfulness of this season in that country, when the valleys of Judah had been plentifully watered by rain, and were not even beginning to be parched by the summer sun. Towards the end of the month the *heat* begins to be felt rather strongly in the southern part of the country. Schulze<sup>r</sup> mentions such intense heat at Rama, on the 30th, that a pilgrim expired under it. The same authority<sup>s</sup> reports the brook Kedron was already dry on the 19th of this month.

When travelling by night in the beginning of April, through the valleys of Mount Ephraim, Shaw<sup>t</sup> was attended for above an hour with an *ignis fatuus*, that displayed itself in a variety of extraordinary appearances; for it was sometimes globular, or else pointed, like the flame of a candle; afterwards it would spread itself, and involve the whole company in its pale inoffensive light. But in less than a minute, it would begin again to exert itself as at other times, running along from one place to another with great swiftness, like a train of gunpowder set on fire; or else it would spread itself over more than two or three acres of the adjacent mountains, discovering every shrub and tree ("the thick bushes," Psalm xxix. 9.) that grew upon them. The atmosphere, from the beginning of the evening had been remarkably thick and hazy, and the dew, as felt upon the bridles, was unusually clammy and unctuous.

**TREES AND SHRUBS.**—The *Oleaster* affords its fruit in April. Of this tree, Palestine has the two more marked species, *Elæagnus augustifolia* and *E. orientalis*, of which the former can endure our open gardens, while the latter requires the protection of a green-house. The

<sup>a</sup> Buckingham, 'Arab Tribes,' 468, 475.

<sup>d</sup> Of this locality see before, p. cviii.

<sup>h</sup> Hardy, 122.

<sup>m</sup> Tom i. p. 393.

<sup>q</sup> Vol. ii. p. 409.

<sup>i</sup> Buckingham, A. T. 396, &c.

<sup>n</sup> 'Arab Tribes,' 492.

<sup>r</sup> Th. v. p. 87.

<sup>b</sup> Ibid. 492.

<sup>e</sup> Tom. ii. p. 241—245.

<sup>k</sup> Monro, ii. 101.

<sup>o</sup> Monro, ii. 101.

<sup>s</sup> Ibid. p. 137.

<sup>f</sup> Reise, 278.

<sup>l</sup> 'Viage,' tom. ii. p. 117.

<sup>p</sup> Vol. ii. p. 201.

<sup>t</sup> Vol. ii. p. 135.

<sup>c</sup> Ibid. 399.

<sup>g</sup> Vol. ii. 136.

two species of oleasters, which have been named, are distinguished chiefly by the *E. orientalis* having sharp straight thorns scattered variously over its branches, while the other is unarmed. The leaf of the oriental species is also twice as broad as that of the other. In stature and manner of growth it resembles a middle sized millian. Schulze<sup>a</sup> saw the oleaster laden with fruit, but he does not say of which species. The fruit of this tree differs much in size according to climate and soil, from that of the berry of the barberry to that



[Oleaster. *Elaeagnus orientalis*.]

of a plum—of which latter size were those seen by our author in the plain of Jericho,—a circumstance which supports the conjecture of some writers that the zacchoum-tree, noticed under the preceding month, may be identified with the oleaster.

The Oleander flourishes with extraordinary vigour, and in some instances grows to a considerable size, by all the waters of Palestine. The Jordan, and the streams which flow into it, are in many parts bordered by thick groves of the oleander; and when the shrub expands its splendid blossoms the effect is truly beautiful. The few travellers who love flowers (Lord Lindsay for instance) speak with rapture of the glorious appearance which the groves of blooming oleanders make in this season, along the streams and in the lone valleys of Palestine. It grows everywhere—in the valleys and by the waters of Lebanon, Israel, Edom, and



[Oleander. *Nerium oleander*.]

Sinai. Burckhardt speaking of the Zerka Mayn (not to be confounded with the more northern Zerka, *i. e.* Jabbok) describes it as flowing through a wood of these trees (which the natives call *defle*<sup>b</sup>) which form a canopy over the rivulet, impenetrable to the meridian sun. The red flowers of these trees reflected in the river gave it the appearance of a bed of roses. The water of the stream (which flows into the Dead Sea) has a disagreeable taste, which the traveller thought was probably occasioned by the quantity of *defle* flowers that fall into it. This was in the middle of July, to which time it appears, therefore, that in proper situations the oleander continues its blossom.<sup>c</sup> The Arabs think the blossoms poisonous to their cattle.

The *Nebek* shrub grows abundantly in the plain of Jericho (where it forms extensive thickets), and in other of the warmer parts of Palestine, as well as throughout Edom and the Sinai peninsula. This branching shrub is the *Rhamnus Lotus*, the true lotus of the *Lotophagi*. The fruit, which formed so prominent an article of diet to these lotus-eaters of old, is ripe in

<sup>a</sup> Th. v. p. 86.

<sup>b</sup> Burckhardt's editor gives *Solanum furiosum* as the botanical synonyme of *defle*, an error which we have inadvertently transcribed in some preceding page. That the *defle* could not be *S. furiosum* is evident from Burckhardt himself, who calls it a tree or shrub; and that it is the oleander we have now ascertained beyond question.

<sup>c</sup> Rauwolf, 49, 233; Hasselquist, 147; Burckhardt, 320, 369, 370, 401, 411; Buckingham, ii. 108; Lindsay, ii. 30, and elsewhere.

April, and is still, wherever it grows, as much an article of food as in former days. The fruit, as growing on the western verge of the plain of Jericho, is described by Monro,<sup>a</sup> as resembling in size and appearance a Siberian crab, in flavour a bad mellow apple, but it contains a stone like that of a cherry. It is a favourite food of the Bedouins; they grind the dried fruit together with the stone, and preserve the meal, called by them *bsyse*, in leather skins. It is an excellent provision for journeying in the desert, for it requires only the addition of butter-milk to make a most nourishing, agreeable, and refreshing diet.<sup>b</sup> Lord Lindsay<sup>c</sup> says that they also make it into small cakes with water or milk. He describes the fruit, of which he ate this month in Sinai, as “delicious.”

Although their fruit is later, we may as well, for the sake of the connection, mention here two other species of *Rhamnus*, which grow very profusely in all parts of Palestine. These are the *R. paliurus*, or common *Christ's Thorn*, and *Rhamnus spina Christi*, the Syrian *Christian's thorn*.—Hasselquist noticed the former near Jaffa in this month, and Rauwolf describes it as contributing to form the hedges near Tripoli.<sup>d</sup> This species rises with a pliant shrubby stalk to the height of eight or ten feet, sending out many weak and slender branches, garnished with pale green oval leaves. The greenish yellow flowers are succeeded by curious broad, round, buckler-shaped seed vessels, which have borders like the brim of a hat, so that it has considerable resemblance to a head with a broad-brimmed hat on—hence its French name *porte chapeau*. This *Rhamnus paliurus* is by many supposed to be the plant which supplied the crown of thorns which was placed on our Saviour's head; and from the commonness of this shrub in Palestine, from the pliability of its thorny branches, which can be bent and twisted into any shape, there is much probability in this conclusion.

But it is seen, by the name, *Rhamnus spina Christi*, that the other species contests this distinction with that which has been described. The one now named has been noticed in various parts of the country, particularly about the mountain Quarantania and the plain of Jericho.<sup>e</sup> It grows up in several shrubby stalks, divided into slender branches armed with straight spines, set by pairs at each joint. Its small yellow flowers are succeeded by a round edible and pleasant fruit, about the size of the sloe.

Among the low rocky mountains which back the plain of Sharon, Monro<sup>f</sup> (on the 13th) noticed, among a great variety of shrubs, the *clethra arborea*, or tree clethra (which is found in our conservatories), flowering in great vigour.

The *White Mulberry* offers its ripe fruit about the middle of this month.<sup>g</sup> The tree is men-



[White Mulberry. *Morus alba*.]

tioned in Scripture<sup>h</sup> in such a way as to show that it was anciently very common in the country. This is still the case, and as growing naturally, or in gardens, it is suffered to attain its proper size and proportions, except in those parts where it is solely cultivated for the sake of the food which its leaves afford to the silk-worm. The orientals generally have one or more trees in the large court-yards of their houses. In Arabia this is generally the palm-tree; it is often the mulberry-tree in those parts of Palestine most favourable to its growth.<sup>i</sup> The mulberry-tree is the source of wealth to the whole country of the Druzes, by the quantities of silk which it enables them to produce. Throughout the mountains of Lebanon and Kesraoun, and in the plain below,

<sup>a</sup> Vol. p. 135.

<sup>d</sup> Hasselquist, 276; Rauwolf, 21.

<sup>e</sup> Hasselquist, 165.

<sup>b</sup> Burchardt's, 'Syria,' 602.

<sup>c</sup> Hasselquist, 129, 276.

<sup>h</sup> 2 Sam. v. 23, 24; 1 Chron. xiv. 14, 15.

<sup>f</sup> Vol. i. p. 281.

<sup>g</sup> Vol. i. p. 99.

<sup>i</sup> Burchardt, 91.

the mulberry-tree is, for this reason, most extensively cultivated; and as the price of silk, the staple commodity of the district, has doubled within the last twelve years, the cultivation is increasing, in some places to the exclusion of every other tree, and even to the neglect of garden produce, which it is found cheaper to purchase from places which have not the same inducements to forego the culture. Thus Beirout derives its principal supply of garden vegetables from Sidon,<sup>a</sup> to which place the peasants of the surrounding country bring their surplus produce for sale; for at Sidon itself, much, although not exclusive, attention is paid to the mulberry culture.<sup>b</sup> It seems that, at least in the plain, the Italian system of culture is followed. The mulberry plants are set in rows, distant from each other six or eight feet; cut off at a corresponding height, and suffered to retain only the fresh twigs. Under this system a given plot of ground produces more foliage than one of equal size in which fewer trees are allowed to attain their natural dimensions; and *all* the leaves can be gathered, which is impracticable when the branches attain a certain growth. Every year in the month of June the trees are topped, having been previously stripped of their foliage, and none but the first fresh leaves are given to the silkworms. Here and there in the plantations, a solitary house consisting of two rooms, one above another, occupied by the cultivator, reminds a stranger of the Scriptural allusion to "a cottage in a vineyard," or "a lodge in a garden of cucumbers." (Isa. i. 8.)<sup>c</sup>

In the mountains, the inhabitants, with great industry, construct terraces one over another, as well to find a series of levels for their plantations, as to arrest the earth washed down from above, and to retain the water which flows down. On these terraces (the general effect of which is shown in the engraving at the head of this chapter) they cultivate their mulberry-trees, and whatever other produce engages their attention. The traveller will often see then these ascending narrow slips planted not only with mulberries, but with olives, vines, and corn, while the inaccessible parts are covered with pines and wild shrubs, among which are often found fine springs of excellent water, the rills from which are of great importance to the terraces below.<sup>d</sup> In this district the *miri*, or land-tax, which is paid by the peasantry, is taken upon the mule-loads of mulberry-leaves, eight or ten trees, in common years, yielding one load. Burckhardt states that the peasant who lives by rearing silkworms pays at the rate of twenty or twenty-five per cent. upon his income; while he who lives by the produce of his fields pays more than fifty per cent.<sup>e</sup>

The *Terebinth-tree*, which in England does not blossom till June or July, is in flower at the beginning of April in Palestine.<sup>f</sup> Of the forest-trees in Palestine, this is one of the most common; and it would seem to have been regarded there, as in other eastern countries, with that distinction and respect which the oak acquired in our northern latitude. It is true that its name does not once occur in our translation of the Bible; but a criticism of Celsius, in his 'Hierobotanicon,' in which he has been followed by most modern translators and interpreters, gives to this tree many of the passages in which our translation names the oak,<sup>g</sup> which tree is then restricted to the passages cited below.<sup>h</sup> And this conclusion is supported by ancient versions, and by probabilities and corroborations, which the reader who feels interest in the question may examine in Celsius. The tree is long-lived; and it is certain that there were in the country ancient terebinths which were renowned and venerated from their real or supposed connection with Scriptural incidents: thus, there was a large and very old terebinth-tree in the valley of Mamre near Hebron, which was highly venerated in consequence of the belief that the tent of Abraham was pitched under its boughs, and that beneath its shade

<sup>a</sup> Elliot, ii. 224.

<sup>b</sup> Buckingham, 'Arab Tribes,' p. 416.

<sup>c</sup> Elliot, ii. 224.

<sup>d</sup> Buckingham, 'Arab Tribes,' 469.

<sup>e</sup> Burckhardt, 169, 188.

<sup>f</sup> Sandys, 176.

<sup>g</sup> Celsius thinks that the *terebinth-tree* is indicated in all the following passages:—אֵילִים, *ailim*, Gen. xiv. 6; אֵילִים, *ailim*, Isa. i. 29; אֵילִים, *ailim*, Isa. lvii. 5; אֵילִים, *ailim*, Josh. xix. 43; אֵילִים, *ailim*, 1 Kings iv. 9; אֵילִים, *ailim*, translated "plain" in the following places: Gen. xii. 6; xii. 18; xiv. 13; xviii. 1; Deut. xi. 30; Josh. xix. 33; Judges iv. 11; ix. 6, 37; 1 Sam. x. 8; 9, 10, 14; 1 Kings xiii. 14; 1 Chron. x. 12; Isa. i. 20; vi. 13, where it is translated "teal-tree;" Ezek. vi. 13; Hos. iv. 13, where it is rendered "elms."

<sup>h</sup> It is considered that only the word אֵילִים, *ailim*, signifies an oak, as in the following passages:—Gen. xxxv. 8; Josh. xix. 33; Isa. ii. 13; vi. 13; xlv. 14; Hosea iv. 13; Amos ii. 9; Zech. xi. 2.



[*Pistacia Terebinthus.*]

the three angels were entertained by him. Eusebius, Jerome,<sup>a</sup> and Sozomen,<sup>b</sup> attest that this tree was a place of great concourse to pilgrims from different parts, in and before the time of Constantine, in consequence of which a great and celebrated fair was held at the spot every year. And this is perhaps the same tree which Josephus<sup>c</sup> had in view, when he takes note of a terebinth-tree near Hebron, which, the inhabitants alleged, had stood there from the creation of the world.

The terebinth (or turpentine) tree is an evergreen of moderate size, but having the top and branches large in proportion to the trunk; the leaves resemble those of the olive, but are of a green colour intermixed with red

and purple, the foot-stalks that bear them always terminate in a single leaf; the flowers are of a purple colour, they are like those of the vine, and grow in clusters like them; the fruit is of the size of juniper berries, hanging in clusters, and each containing a single seed of the size of a grape-stone; they are of a ruddy purple, and remarkably juicy; another fruit, or rather excrescence, is found on the tree, scattered among the leaves, of the size of a chestnut, of a purple colour, variegated with green and white. The people of Cyprus believe that this is produced by the puncture of a fly: on opening them they appear full of worms.<sup>d</sup> From the trunk distils a valuable resin, or gum, from which the tree takes its name. It is called Cyprus or Chian turpentine, and is obtained, in July, by wounding the bark in several places, leaving a space of about three inches between the wounds. From these the turpentine is received on stones, upon which it becomes so much condensed by the coldness of the night as to admit of being scraped off with a knife, which is always done before sunrise. It is again liquified in the sun and passed through a strainer, in order to free it from all extraneous matters. The quantity produced is very small, four large trees, sixty years old, only yielding two pounds nine ounces and six drachms; it may be somewhat more in very favourable situations. In consequence of this, and its superior qualities, this turpentine is very costly, and is often much adulterated with other and inferior turpentines.

*The Fig tree.*—Shaw<sup>e</sup> remarks that in the early part of this month the *boccores*, or first ripe figs, were still hard, and not larger than common plums. The people have, however, a method of making them soft and palatable by steeping them in oil.

**THE VINE.**—In the month of April a new shoot, bearing fruit, springs from that branch of the vine that was left in March, and this must also be lopped.<sup>f</sup>

**GRAIN.**—Buhle's statement, under this month, explains many apparent discrepancies in the reports of travellers respecting the corn in Palestine. "The harvest falls out entirely according to the duration [or rather *period*, for it is of irregular occurrence] of the rainy season. After the rains cease, the corn soon arrives at maturity. Much also depends on the time of its being sown, which, as already shown, is sooner done by some than by others. Nor must we omit that the corn remains long in the fields after it is ripe. The threshing of corn is performed in the open air, and in some degree interrupts the harvest. Lastly, allowance is to be made for the temperature of the air, which varies in different levels and situations."

<sup>a</sup> De loc. Heb. fol. 87.<sup>d</sup> Mariti, i. 209; ii. 114.<sup>b</sup> Eccles. Hist. l. ii. c. 4, p. 447.<sup>e</sup> Vol. ii. p. 137.<sup>c</sup> De Bello Jud. l. v. c. 9, sect. 7.<sup>f</sup> Brocard, 332.

The condition of the wheat is more uniform than that of barley, seeing that it is sown only in the autumn and early winter, whereas barley is sown *also* in the latter end of winter and early spring. Hence two fields of this grain will often be found in a very different condition in the very same neighbourhood. Thus Richardson, in the very south country between El Arish and Gaza, saw, on the 5th, barley *in the leaf*, much less forward, as he remarks, than in Egypt; but the day after, still between the same two towns, he beheld barley in the ear and *nearly ripe*.<sup>a</sup> In the plain of Jericho it is quite ripe, according to Mariti, in the beginning of April, and almost everywhere is at that time in full ear.<sup>b</sup> Even in the north, between Beirout and Tripoli, barley is fully ripe by the 21st.<sup>c</sup> In fact, by a comparison of different statements, it appears that in this country, as in others of the same latitude and analogous climate, the greater part of the barley becomes perfectly ripe in the course of this month, in which the barley-harvest commences early, and a large proportion of it is got in before the month ends.<sup>d</sup> Or, in other words, the barley-harvest may be considered at its height towards the end of the month, having commenced before the middle of it, and being continued into the next month.

Wheat is in a less advanced state than barley, but it begins to be reaped towards the end of April,<sup>e</sup> and continues through May into June. Although, therefore, April might be called the month of barley-harvest, May may be considered the great harvest-month, seeing that the barley-harvest extends into it, and the wheat-harvest reaches its height. To May, therefore, we shall refer such observations as we have to make on the agricultural operations connected with the harvest season.

The growing corn, in various states of progress, gives to the cultivated districts a strikingly fine appearance; for the corn-land being undivided by separate enclosures, and unbroken by hedge-rows, a whole plain or valley is, under the most gentle breeze, agitated from end to end by the peaceful undulations of the waving grain.

**ESCULENT VEGETABLES.**—Russell says that (at Aleppo) in April and May come in lettuce,<sup>f</sup> beans,<sup>g</sup> peas,<sup>h</sup> artichoke,<sup>i</sup> purslain,<sup>k</sup> and two species of cucumber,<sup>l</sup> all of which continue in season till July. Correspondingly, Hasselquist<sup>m</sup> ate *lettuce* at Jerusalem on the 23rd. And with respect to *beans*, Burckhardt<sup>n</sup> states that the bean-harvest takes place at the end of April in the Haouran, where vast tracts are sown with this legume, and the product serves as food for cows and sheep. The bean-harvest seems to be there and everywhere the first of the year; and this being at the end of April, it becomes necessary to note that the seasons are somewhat later in the high plain of the Haouran than in many other parts of the country.

In the plain of Sharon, Monro,<sup>o</sup> on the 12th, crossed a small plot of ground which had been carelessly turned over with the plough, and sown with *melons*. The husbandman had gone his way to a distance, and would not return until he should calculate that the time of harvest had arrived. The plants were just peeping above the surface.

The *sugar-cane* has long been cultivated to some small extent in Palestine. "The sweet cane" of the sacred books is, however, not to be understood of the sugar-cane, but of an aromatic cane, perhaps the *calamus aromaticus*. The constant and exclusive mention of "honey" in Scripture would indeed suffice to intimate that *sugar* was wanting. It must have come into culture, however, some time after the Captivity; for an article in the Mishna enumerates certain products which the Jews were forbidden to sell to the polytheists, lest they should offer them to their idols, and among these is the sugar-cane.<sup>p</sup> It has not been much noticed by travellers, only just enough to apprise us of its continued culture in that country. Abulfeda<sup>q</sup> says that it was cultivated in his time in the neighbourhood of Tripoli; Benjamin of Tudela

<sup>a</sup> Richardson, ii. 192, 193, 197.<sup>b</sup> Shaw, ii. 137.<sup>c</sup> Buckingham, 'Arab Tribes,' p. 451.<sup>d</sup> See Korte, 187. 145, 432; Egmont and Heyman, i. 335; Eckliu, p. 16; Cotovic, 93; Radzivil, 159, 411.<sup>e</sup> Bp. Baldric in *Gesta Dei per Francos*, 129; confirmed by the author of the *Gesta Francorum*, &c., in the same work.<sup>f</sup> *Lactuca sativa*.<sup>g</sup> *Vicia faba*.<sup>h</sup> *Pisum sativum*.<sup>i</sup> *Cynara scolymus*.<sup>k</sup> *Portulaca oleracea*.<sup>l</sup> *Cucumis sativus*.<sup>m</sup> Page 154.<sup>n</sup> 'Syria,' 296.<sup>o</sup> Vol. i. p. 77.<sup>p</sup> Mishna, tit. Avoda-sara, c. i. § 6.<sup>q</sup> Tab. Syrie, p. 102.<sup>r</sup> 'Itinerarium,' cap. vii.

noticed it in the environs of Tyre; its presence is noticed by Brocard<sup>a</sup> and Rheinfelder.<sup>b</sup> And Buckingham,<sup>c</sup> early in January, noticed, not far from Tyre, sugar-canes already two or three feet above the ground. We notice the subject this month because both in Egypt<sup>d</sup> and Cyprus<sup>e</sup> the cuttings are planted either at the latter end of March or in the beginning of April. The only traveller who has taken any notice of the process followed in Palestine is Rauwolf, who observes that the plants are not grown from seeds, neither are they propagated by the roots, but by the canes themselves. The cultivator lays into the ground some green pieces two or three joints long; and, that they may grow the sooner, rather large holes are bored in between the joints; when they begin to grow they sprout out in the joints, and grow up into large canes. These canes, he says, "are as high and big as our canes, and not much differing from them, but within, and down towards the root, where they are best, they are full of this pleasant juice; wherefore the Turks and Arabs (who are passionately fond of sweetmeats) buy a great quantity of them, which it gives them great pleasure to chew and eat. They strip off the long leaves, and cut away the tasteless parts, retaining only what is juicy and good, which is about two feet in length. Of the canes thus prepared, they carry many along with them through the streets, and cut off one piece after another, peel them, and so chew and eat them openly, everywhere in the streets, without shame. The parts which are eaten are very tender, and feel as mellow between the teeth as sugar itself."<sup>f</sup> Some small quantities of sugar were then, and we believe are now, made; but it is for the use of them thus described that the canes are cultivated. The case is the same in Egypt.

PLANTS.—What Dr. Russell says of the neighbourhood of Aleppo at this season is strictly applicable to most of Palestine. To a lover of botany nothing can exceed the beauty of the country about the end of April and the beginning of May. The rising and waste grounds on all hands meet his eye, and the corn-fields, which are never weeded,<sup>g</sup> seem as if sown purposely for his entertainment. The *lion's-leaf*,<sup>h</sup> which earlier in the season decorated the later-ploughed lands, still, in some places, towers above the ripening barley, while its bright yellow is finely contrasted by the *gladiolus*, the deep azure of a luxuriant *borage*, and a beautiful plant with a pale blue flower.<sup>i</sup>

"Numerous are the *pentandria*, *tetradynamia*, and *diadelphica* plants of humble growth, found among the wheat and barley, or in the wide-extended fields of various legumes; and it is there the *corn-poppies* are seen, of a hue so vivid as to dazzle the eye.

"The sloping sides and the rocky summits of the low hills, as well as the uncultivated stony dales, by which the hills are intersected, are not at this time without their peculiar plants; but the botanical harvest of the former falls somewhat later in May."<sup>k</sup>

In his first edition, Russell gives the *names* of the plants which, in the above extract (from the second edition), are indicated by their classes only.

In availing ourselves of this list, we have arranged the plants in the received order, which is very different from that in which they are placed by Russell; and in some instances we have exchanged his synonymes for those which are more generally understood:—Sage;<sup>l</sup> corn-sallad;<sup>m</sup> gladiole;<sup>n</sup> scabious;<sup>o</sup> ladies' bed-straw;<sup>p</sup> viper's bugloss;<sup>q</sup> gromwell;<sup>r</sup> comfrey;<sup>s</sup> bugloss;<sup>t</sup> pimperl;<sup>u</sup> yellow-hoary mullein;<sup>v</sup> bell-flower;<sup>w</sup> eryngo;<sup>x</sup> flax;<sup>y</sup> lily-daffodil; nasturtiums; berry-bearing chick-weed; lychnis;<sup>aa</sup> base-rocket;<sup>ab</sup> poppies;<sup>bc</sup>

<sup>a</sup> Descript. T. S., 316.

<sup>d</sup> 'Agriculture de l'Egypte,' 115.

<sup>e</sup> This is not now the case in all parts of Syria. Between Beirut and Tripoli, in this very month, Buckingham observed the peasantry out weeding by hand in the fields, which were as clean as could be desired.—'Arab Tribes,' 451.

<sup>h</sup> *Leontice leontopetalon*.

<sup>i</sup> *Amaryllis montana*.

<sup>k</sup> Russell, ii. 240.

<sup>l</sup> *Salvia*, three species.

<sup>m</sup> *Valeriana oltoria*.

<sup>n</sup> *Gladiolus communis*.

<sup>o</sup> *Scabiosa orientalis*.

<sup>p</sup> *Galium luteum*; *G. arvense*; *G. album*.

<sup>q</sup> *Echium vulgare*; *E. violaceum*.

<sup>r</sup> *Lithospermum arvense*; *L. dispernum*.

<sup>s</sup> Two varieties of *Symphitum orientale*.

<sup>t</sup> *Lycopsis oniscaria*.

<sup>u</sup> *Anagallis arvensis*, and the blue-flowered (*flore cœruleo*) variety.

<sup>v</sup> *Verbascum pulcrulentulum*.

<sup>w</sup> *Campylna pentagonia*.

<sup>x</sup> *Eryngium stellatum*.

<sup>y</sup> *Linum orientale*; *L. sativum*.

<sup>aa</sup> Fourteen species.

<sup>ab</sup> *Reseda vulgaris*.

<sup>bb</sup> *Papaver hybridum*; *P. Rhæas*.

<sup>bc</sup> *Glacium luteum*; *G. violaceum*; *G. orientale*.

larkspurs; <sup>a</sup> columbine; <sup>b</sup> iron-wort; <sup>c</sup> ground-pine; <sup>d</sup> betony; <sup>e</sup> scull-cap; <sup>f</sup> Moldavian balm; <sup>g</sup> fig-wort; <sup>h</sup> delphinium; toad-flax; <sup>i</sup> mad-wort; <sup>k</sup> pepper-wort; <sup>l</sup> common whitlow-grass; <sup>m</sup> rocket; <sup>n</sup> hedge-mustard; <sup>o</sup> wild-mustard; <sup>p</sup> common kidney-vetch; <sup>q</sup> milk-vetch and four other species of vetch (*vicia*); <sup>r</sup> rest-harrow; <sup>t</sup> trefoils; <sup>u</sup> sanfoin (St. Foine); <sup>v</sup> bird's-foot; <sup>w</sup> horse-shoe-vetch; <sup>x</sup> goat's-rue; <sup>y</sup> bird's-foot-trefoil; <sup>z</sup> moon-trefoil; <sup>aa</sup> knapweed; <sup>bb</sup> satyrion; <sup>cc</sup> birth-wort. <sup>dd</sup>

We also learn from Dr. Russell that among the rank herbage in the gardens are found at this season—borage; <sup>ee</sup> German mad-wort; hound's-tongue; <sup>ff</sup> broom rape; mint; <sup>gg</sup> rush; <sup>hh</sup> balm; <sup>ii</sup> thyme; vervain; <sup>kk</sup> dittander; <sup>ll</sup> common and fig-leaved hollyhocks; <sup>mmm</sup> cinquefoil; lily; burdock, but in smaller quantity.

Thevenot, <sup>pp</sup> travelling towards the latter end of this month, from Damascus to Aleppo, journeyed over an extensive plain covered with heath and "*Abrotanum fœmina*." <sup>qq</sup> On a following day he passed over another great plain, "full of daffodils, crowfoots, wind-flowers, willow-herbs, hyasop, dragon-wort, and several other flowers, which, by their variety and multitude, yielded a very lovely prospect."

In the rich pasture-land of the plain of Sharon, Mr. Monro tells us (on the 10th) that "The white clover springs spontaneously, and among a variety of shrubs and flowers were a few dwarf-tulips. I observed nothing bearing the appearance of what we call a rose; and unless 'the rose of Sharon' is the *cistus roseus*" of Linnæus, which grows abundantly, I know not what it may be." Mr. Wilde, travelling over the same plain somewhat earlier, says, "Much has been written, and many opinions expressed, regarding 'the rose of Sharon.' I agree with those authors who state that it is not a rose, but a *cistus*, white or red, with which this vale in particular and other parts of Judea abound."<sup>rr</sup> This procumbent species of *cistus* is held by some to be only a variety of *cistus helianthemum*, <sup>ss</sup> which is better known in England than the *cistus roseus*: this last was, however, cultivated in the botanic garden at Chelsea so long back as 1723, from seeds sent from Smyrna by Dr. Sherard.

*Lavender* is noticed by Mr. Monro <sup>uu</sup> among the plants with which the plain of Sharon is



[*Cistus roseus*.]

- <sup>a</sup> *Delphinium segetum*; *D. arvense*.
- <sup>c</sup> *Sideritis montana*; *S. romana*; *S. lanata*.
- <sup>f</sup> *Scutellaria orientalis*.
- <sup>g</sup> *Dracocephalum Moldavica*.
- <sup>h</sup> *Antirrhinum pelissierianum*; *A. Halepense*; *A. calycinum*.
- <sup>i</sup> *Lepidium perfoliatum*; *L. sativum*; *L. latifolium*.
- <sup>l</sup> *Eruca Halapensis*; *E. latifolia*.
- <sup>p</sup> *Sinapis arvensis*: there are also *S. alba* and *S. Halepensis*.
- <sup>r</sup> *Astragalus*, several species.
- <sup>t</sup> *Ononis antiquorum*; *O. cherleri*; *O. natrix*; *O. pubescens*.
- <sup>w</sup> Several species not very clearly distinguished.
- <sup>x</sup> *Ornithopus scorpioides*.
- <sup>z</sup> *Hippocrepis unisiliquosa*.
- <sup>aa</sup> Species not named; but the *Lotus Arabicus*, and that only, occurs in the classed list of the second edition.
- <sup>bb</sup> *Medicago radiata*; *M. echinata*; *M. sativa*; *M. polymorpha*, six varieties.
- <sup>cc</sup> *Orchis collina*.
- <sup>dd</sup> *Aristolochia maurorum*; *A. longa*.
- <sup>ff</sup> *Cynoglossum creticum*.
- <sup>gg</sup> *Mentha sylvestris*; *M. augustifolia*.
- <sup>hh</sup> Species not named: but those in the classed list of the second edition are *Juncus acutus*; *J. tenax*; *J. bufonis*.
- <sup>ii</sup> *Melissa hortensis*.
- <sup>kk</sup> *Verbena tenuifolia*, and another not distinguished.
- <sup>ll</sup> *Lepidium perfoliatum*; *L. sativum*; *L. latifolium*.
- <sup>mm</sup> *Althæa rosea*; *A. ficifolia*.
- <sup>nn</sup> *Liatris candidum*: and another, purple, perhaps *L. Martagon*.
- <sup>oo</sup> *Arietium lappa*.
- <sup>pp</sup> "Travels, pt. ii. p. 26, 27."
- <sup>qq</sup> *Artemisia abrotanum*, or "southernwood."
- <sup>rr</sup> "Rose-flowering *cistus*."
- <sup>ss</sup> "Narrative," Vol. ii. 174.
- <sup>tt</sup> "Dwarf *cistus*," or "little sun-flower."
- <sup>uu</sup> Vol. i. p. 87.
- <sup>v</sup> *Aquilegia sylvestris*.
- <sup>d</sup> *Teucrium chamæpytia*.
- <sup>e</sup> *Betonica orientalis*.
- <sup>l</sup> *Scrophularia orientalis*.
- <sup>k</sup> *Alyssum minimum*; *A. campestre*; *A. strigosum*.
- <sup>m</sup> *Draba verna*.
- <sup>o</sup> *Erysimum officinale*; *E. repandum*.
- <sup>q</sup> *Anthyllis vulneraria*.
- <sup>v</sup> *Vicia segetum*; *V. orientalis*; *V. sylvestris*; *V. augustifolia*.
- <sup>v</sup> *Hedysarum onobryches*.
- <sup>y</sup> *Galega vulgaris*.
- <sup>bb</sup> *Centaurea scabiosa*.
- <sup>cc</sup> *Borago officinalis*.

overgrown. Near Ramlah, he noticed, among the wheat, many plants of the *Amaryllis orientalis* in flower, with its round terminal head, thick set with florets.<sup>a</sup> In the same neighbourhood the *anemone alpina* grew abundantly, and the *cyclamen hederæfolium*<sup>b</sup> attained a size and brightness of colour beyond its wont in Europe.<sup>c</sup>

## MAY.

WEATHER.—Dr. Russell reports of the weather at Aleppo, that in May the sky is sometimes variegated with transient white clouds, but generally is quite serene. There are commonly a few hard showers of rain, often accompanied with thunder, and sometimes intermixed with hail. The weather becomes very hot in this month, especially in calms, or when the wind is either northerly or easterly, but the winds for the most part are westerly. It is also remarked that, during the whole summer, the westerly winds have great influence on the weather. When they blow weakly the heat increases, but when they cease it becomes extreme. These alterations, however, of the west wind are more sensibly felt by the human body than they are indicated by the thermometer; whereas during the north and the east winds the weather is not only most oppressively hot to the senses, but the mercury also is raised several degrees.

The greatest height of the thermometer this month is 92°, and the least 67°; and the greatest difference in any one day is 10°. The morning station of the mercury at the beginning of the month is 70°, and as the month advances it rises to 76° and 80°. The difference in the afternoon increases gradually from 6° to 9°.

For the seventeen first days of this month we continue to enjoy the advantage of the comparisons which Mr. Turner's registrations offer, and which, as before, we collect and embody in a tabular form:—

Day.	Therm.	Time.	Place.	Day.	Therm.	Time.	Place.	Day.	Therm.	Time.	Place.
1	65°	Noon	Jerusalem	4	64°	4 P.M.	Near Jerusalem	10	73°	Noon	Jerusalem
2	97½	1½ P.M.	Plain of Jericho <sup>d</sup>	5	70	Noon	Jerusalem	12	69	10½ P.M.	Jerusalem
—	83	8 P.M.	Plain of Jericho	6	64	7 A.M.	Jerusalem <sup>e</sup>	13	76	Noon	Jerusalem
3	78	8 A.M.	In water of Dead Sea	7	69	3 P.M.	Jerusalem	14	73	Noon	Jerusalem
—	85	Noon	Plain of Jericho	—	71	9 P.M.	Jerusalem <sup>f</sup>	15	Missed		
—	89	2½ P.M.	Plain of Jericho	8	67	Noon	Jerusalem	16	68	Noon	Jaffa
				9	63	9 P.M.	Jerusalem	17	66	Noon	Jaffa

This again illustrates the applicability of Dr. Russell's statements respecting Aleppo to Palestine; for although the noted extremes of heat and cold are greater in Palestine, this is not considerable, nor more than we might expect from the changes in the *station* of Turner's thermometer, while that of Dr. Russell was stationary. The only instance in which the thermometer rose above the highest point at Aleppo, was in the proverbially hot plain of Jericho; but then this was at the beginning of May, whereas doubtless Russell obtained his 92° towards the end of that month at Aleppo.

Before leaving Jerusalem Mr. Turner was informed by the monks of the convent of St. Salvador in that city, that the climate of Jerusalem is seldom excessively hot. The nights are cool, and in Jerusalem, as all over Syria, the dews at night fall most copiously. The west wind is that which most commonly blows. During Mr. Turner's own stay there were five days of siroc wind, and every other day besides the west wind blew.<sup>g</sup> This observation is valuable as respecting the general character of the summer climate at Jerusalem. But in estimating its effect, we are to bear in mind that the report is rendered by persons who are for the most part natives of the warmest country of Europe (Spain), and who therefore use

<sup>a</sup> Vol. p. 89.

<sup>b</sup> Ivy-leaved eyclamen.

<sup>c</sup> Vol. i. p. 99.

<sup>d</sup> This was within the tent.

<sup>e</sup> Later in the day Mr. Turner went to Bethlehem, and states that the sun was burning hot, and, as it was a siroc wind, the weather was insufferably sultry. Padre Manuela and the dragoman had prudently provided themselves with umbrellas.

<sup>f</sup> The siroc continued, and the heat was as suffocating as yesterday.

<sup>g</sup> Turner, ii. 274.

the comparative terms "cool" and "not excessively hot," in a sense somewhat different from that in which they would in our colder climate be received.

With respect to the summer quarter generally, as at Aleppo, Russell remarks<sup>a</sup> that the westerly winds, predominating through this season, serve to moderate the excessive heats, which, were it not for this kind dispensation of Providence, would render the country in a great measure uninhabitable; considering the cloudless sky, the intense power of the sun, and the reflection from the white chalky soil, and from the stone walls of the houses. The vicissitude of the seasons is much less irregular than in more northern regions; and the air is so salubrious, that from the end of May to the middle of September it is usual for the inhabitants to sleep exposed on their terraces, under the open canopy of heaven, without danger from damps or other noxious qualities of the atmosphere.

Lord Lindsay,<sup>b</sup> whose statement refers from the 11th of this month to the early part of the next, describes the weather generally, in the different parts of Palestine which he then visited, as delightful, seldom excessively hot, even at noon; while the mornings and evenings were delicious indeed. He afterwards extends this observation to the Haouran, remarking that the weather was there sunny, but not too hot, with refreshing breezes from the west.

Nevertheless the hot Syrian summer gives evidence that it has commenced, in the occasional complaints of the various travellers cited below of the excessive heat which they endured while travelling in the day-time,<sup>c</sup> or which prevented them from travelling other than by night. Pococke<sup>d</sup> describes the ground in and bordering the plain of Esdraelon as cleft and chapt by the burning heat. The spontaneous vegetation of the country, in the more exposed situations, also becomes parched and withered under the increasing force of the sun's rays. Korte<sup>e</sup> alleges that the face of the country is thus in May rendered as barren as by too sharp a winter with us. And Richardson,<sup>f</sup> as early as the 12th, found the vegetation quite burnt up around Bysan, where, however, the heat was greater than he had previously experienced in Palestine. Shulze<sup>g</sup> and Hasselquist,<sup>h</sup> however, complain of heat even on the coast, where the reflection of the sun's rays from the sea and the sands rendered it almost unbearable; and if this should seem to contradict the testimony of other travellers, the reader may be reminded that morning and evening the air is refreshed by the breezes which blow from the sea. In this, as in all other months, for which reason we shall not (in general terms) repeat the observation, the heat is the greatest in the plain of Jericho and the whole valley of the Jordan. There, even early in May, every plant is already dried up, and the whole country appears as if in the midst of summer; at the same time that the plains of the Haouran are covered with the richest verdure of wild herbage.<sup>i</sup>

Nevertheless, the air still is cool in the more elevated parts. Egmont and Heyman<sup>k</sup> found the air at Safet so pure and salubrious, and at the same time so cool, that the summer heat, which was already so strong in the adjacent plains, was hardly perceptible there. The snows of Lebanon thaw rapidly now, but in the more elevated parts the cold is still very sharp; and there, in the early part of this month (7th), Maundrell found the snow still so hard frozen as to be able to sustain the weight of men and horses.<sup>l</sup> On the 17th Burckhardt found the night so cold in Sinai, that the fire was kept up, and the party lay around it all night. Some notion of the difference caused by differing elevation may be formed from the fact that, later in the month, the same traveller found the thermometer often at 102°, 105°, and once even at 110°, in the plains of the Sinai peninsula, whereas at the Convent of St. Catherine it never rose higher than 75°.<sup>m</sup>

Rains sometimes fall in the early part of this month, but from the end of it to September are not known in Palestine.<sup>n</sup> In Northern Syria, and in the mountains of Lebanon and of Arabia Petræa, rain is more frequently mentioned.<sup>o</sup> Thevenot<sup>p</sup> found the sky sometimes

<sup>a</sup> Nat. Hist., vol. i. pp. 63, 64.

<sup>b</sup> Vol. ii. p. 70.

<sup>c</sup> Robertus Monachus in *Gesta Dei per Francos*; Schulze repeatedly,—as at Mount Tabor on the 15th, at Magdala on the 16th, and at Cesarea on the 25th; Schweigger, 317; Hasselquist, 180.

<sup>d</sup> Vol. ii. p. 114.

<sup>e</sup> Reise, 257.

<sup>f</sup> Travels, ii. 424.

<sup>g</sup> Leitungen, 167, 169.

<sup>h</sup> Reise, 184.

<sup>i</sup> Burckhardt, 275.

<sup>k</sup> Travels, ii. 47.

<sup>l</sup> Journey, 236.

<sup>m</sup> 'Syria,' pp. 537, 571.

<sup>n</sup> Korte, 257; Schweigger, 280.

<sup>o</sup> Burckhardt's 'Syria,' and Buckingham's 'Arab Tribes,' *passim*.

<sup>p</sup> Tome ii. p. 51.

cloudy with rain at *Aleppo*, in May and June, but he adds that all the natives appeared astonished at the circumstance. Mr. Buckingham, travelling in the early part of this month (to the 11th, when he reached Antioch from the south), speaks of rain almost daily, mostly in showers, but sometimes in continued torrents. The rain was brought by gales from the south-west.<sup>a</sup> What Burckhardt states<sup>b</sup> of the Sinai mountains, is probably true also of Lebanon, that flying showers occur during the summer, but are never sufficiently copious to produce torrents. Safet, near the Lake of Tiberias, on account of its elevated site, can scarcely be cited in evidence of the general climate of Palestine; we would therefore exclude any general inference from the fact that *there* Monro experienced heavy rain on the 9th. On arriving there, he says, "the rain had fallen in floods for the two last hours, and as we ascended through the town the narrow streets seemed little better than mountain torrents. The water was flowing furiously down them, while the old ladies were hoeing up drains upon the flat roofs of their mud-built abodes, to prevent it from soaking through."<sup>c</sup> But, upon the whole, it is to be considered that the expectations of rain in Palestine are well-nigh over when the month of May begins.

Travellers speak of thunder and lightning this month, but more of these notices refer to Lebanon on the one hand, and to Sinai on the other, than to Palestine. The thunder and lightning, often in violent and successive peals, appear to occur most frequently on those days in which it rains, and sometimes are attended by, or alternate with, falls of hail. And here it may be observed, after Russell,<sup>d</sup> that hail in Syria falls most commonly in the latter part of spring, and the hail-stones are often of enormous size. This writer had seen hail-stones at Aleppo two inches in diameter; but sometimes irregularly shaped pieces are found among them weighing about twenty drachms. These hail-storms make terrible havoc among the windows, as likewise among the glazed frames which are often employed in winter to shut up the great divan facing the court-yard, by which means it is converted into a cheerful winter apartment: in summer these frames are removed. Above twelve hundred panes<sup>e</sup> of glass in one seraglio have been broken in a short hail-storm. This is quite in conformity with the various allusions to storms of hail, and to hail-stones of large size, which the Scriptures contain.

This month the sky and atmosphere are generally clear. It is cloudy on those days which bring or threaten rain; and mists or fogs occur in particular situations, especially in the morning. Mount Tabor is sometimes wholly covered by fogs.<sup>f</sup> Schulze, travelling (on the 18th) from Tabor to Tiberias, observed a dry mist, such as usually obscures the sun with us; and yet he neither observed smoke, dust, vapour, nor smell; he learned from the natives that this is often observed when the heat is excessive.<sup>g</sup> On the 19th Maundrell beheld heavy clouds rolling from the tops of the mountains into the valleys of Lebanon.<sup>h</sup>

Russell's statement respecting the winds at Aleppo applies very well to Palestine. It has further been noticed that the south-west wind continues to bring cloudy weather and rain. Sometimes gales arise very suddenly, especially in the evening after a very hot day. Thus Monro, when encamped at the foot of Mount Hermon (near Tabor) after sunset, found the evening breeze fresher, and a sudden blast blew down his tent. The wind afterwards settled into a steady gale from the south, and the light fleeting clouds, chasing each other across the sky, foreboded its continuance.<sup>i</sup>

**TREES AND SHRUBS.**—*Oleanders*, continuing still in bloom, are as much noticed in this as in the preceding month by travellers. Besides abounding in all the water-courses of the country, Madox noticed in this month that fine oleanders in full bloom were growing all along the borders of the Lake of Tiberias, mostly in the water.<sup>k</sup> The same observation was made by Monro.<sup>l</sup> The lake is here richly margined with a wide belt of oleanders, growing in

<sup>a</sup> 'Arab Tribes,' 505, 519, 543, 552.

<sup>c</sup> 'Summer Ramble,' ii. 12, 13.

<sup>e</sup> The panes in oriental windows are small, as in our lattices. They are, however, set in wood, not in lead.

<sup>f</sup> Zollam vel Zolm Schiammah, in Walch.

<sup>l</sup> 'Summer Ramble,' i. 279.

<sup>b</sup> 'Syria,' 539.

<sup>d</sup> Vol. i. p. 71.

<sup>g</sup> Leitungen, p. 199.

<sup>h</sup> Journey, 239.

<sup>k</sup> 'Excursions,' ii. 251.

<sup>i</sup> 'Summer Ramble,' ii. 5.

such luxuriance as they are never known to do even in the most genial parts of Europe; they were at this time (May 9th) in full flower, and when seen from the rocks above, presented an unbroken surface of the brightest roseate hue, and, imaged in the mirror of the clear blue lake, had decked the scene with all the glowing charms of nature, ever the fairest and most fascinating on which the eye can rest.<sup>a</sup>

In the valley of Petra, in Edom, Captain Mangles took notice of “a very beautiful species of *aloe*, bearing a flower of an orange hue, shaded to scarlet; in some instances it had upwards of a hundred blossoms in a bunch.”<sup>b</sup> This is the only notice which we find of any species of *aloe* growing in or near Palestine. The word “*aloes*”<sup>c</sup> in our version of the Scriptures, is applied to the resinous distillation from a foreign tree, much used anciently in embalmments, and the “*lign-aloe*,”<sup>d</sup> more frequently mentioned, is agreed, even by the Jewish writers, to be a foreign plant.<sup>e</sup>

*Apricots*, which are extensively cultivated in the orchards of Palestine, begin this month to yield ripened fruits. From the conspicuous manner in which this tree is mentioned by travellers in this country, the statement of Clarke with respect to the apricot trees of Cyprus seems, to a considerable extent, applicable also to Palestine. He was shown a beautiful garden filled with standard apricot trees laden with ripe fruit.<sup>f</sup> There was one variety of the apricot, which bore fruit with a smooth shining skin, like our common nectarine. All these trees in the gardens of Nicotia equal in size the apple trees of our English orchards, and their branches are supported by props, to prevent their breaking by the load of fruit which covers them.<sup>g</sup> The attention which is paid to the culture of this tree in Syria is indicated on approaching Damascus, by the nurseries of apricot trees, for ultimate transplantation into the gardens of that city.<sup>h</sup>

Adam’s apples, or plantains, gooseberries, and currants, are mentioned by Rauwolff as cultivated, in his time, in the gardens of Aleppo. In Russell’s time none of these were found there; but, on the other hand, cherries, unknown there in the time of Rauwolff, had become common when Russell wrote; and strawberries had been brought from Europe, and were cultivated in chests upon the terraces. This statement is valuable, inasmuch as Palestine cannot be supposed to have possessed, at any time, such of these fruits as were not known at Aleppo. We quite conclude that the ancient Hebrews knew nothing of strawberries, gooseberries, cherries, and currants.

The common early *apples* also ripen towards the end of May.<sup>i</sup> In Sinai *orange trees* are now in blossom, diffusing a fine perfume.<sup>k</sup>

From the frequency with which the *Arbutus* is mentioned by travellers, more particularly by Captains Irby and Mangles, and by Lord Lindsay, it would seem that this shrub is very common, especially in the hills and river-valleys beyond Jordan, but not so in the open plains. The species are the common and oriental strawberry-trees,<sup>l</sup> of which the latter would appear to be much the commoner. The rich appearance which the former makes at the latter end of the year, when it bears its fresh flowers, together with the fruit of the preceding year, in fine contrast with the leaves, is well known. The latter, which is a proper Levantine shrub, affords its flowers (which are like those of the other species) in the



[*Arbutus andrachne*.]

<sup>a</sup> Respecting oleanders observed in bloom this month, see also Irby and Mangles, 361, 374, 427; Lindsay, ii. 77, 125.

<sup>b</sup> Travels, 427.

<sup>c</sup> John, xix. 13.

<sup>d</sup> Num. xxiv. 6; Psalm xlv. 9; Prov. vii. 17; Sol. Song, iv. 14.

<sup>e</sup> See the 'Pictorial Bible' on Psalm xlv. 9.

This was in June.

<sup>f</sup> Clarke, iv. 62; see also pp. 6, 17, 62.

<sup>h</sup> Burckhardt, 47; see also 583; and Mariti, ii. 135.

<sup>i</sup> Poccoke, ii. 126.

<sup>k</sup> Burckhardt, 578.

<sup>l</sup> *Arbutus unedo* and *A. andrachne*.



months from March to May in Palestine, when it attracts much attention, for it grows to a much larger size than it attains in our latitudes, the trunk being in some instances six feet in circumference. Lord Lindsay speaks of the arbutus as one of the three trees which principally give a wooded character to the hills of Gilead and Bashan. The other two are the oak and the fir. In this hill country he thought it possible to distinguish three races of vegetation: the uppermost producing chiefly the prickly oak and the arbutus; the central, the same, with the addition of the fir; while in the lowermost the prickly and evergreen oaks prevailed.<sup>a</sup> The association of these three trees also forms the woodland scenery of southern Judea, as noticed by Captain Mangles, who speaks with much satisfaction of the pleasant appearance they gave to the country about Hebron—far more pleasant, he deems, than that of Jerusalem.<sup>b</sup> The fir is the Scotch fir.<sup>c</sup>

As the *thorns* in Palestine seem to attract the notice of travellers more in this month than in any other, and as most of them are now in their most conspicuous condition, they may well be noticed in this place. The great difference in the Hebrew words which are all rendered by the word “thorn” in our translation of the Scriptures has been a subject of great perplexity to those who study the natural history of the Bible, while it may suffice to intimate the variety of the thorns which the country affords. It is therefore useful for the purposes of further inquiry that the *noticed* species which the country actually produces should be known. Of the proper thorns, we find but three *named* species. These are,—1. The common hawthorn;<sup>d</sup> 2. The parsley-leaved hawthorn;<sup>e</sup> and, 3. The three-styled hawthorn.<sup>f</sup> The first of these is too well known to require notice. The second has a lighter bark, with a larger and paler leaf; its fruit also is larger, and when fully ripe has an agreeable acid taste, for which it is esteemed as a table fruit in the Levant. Of the third we know nothing but the name; and seeing there has been so much controversy about number of styles in the different species of *cratægus*, the erection of this into a distinct species may be of doubtful propriety. Accordingly we do not find it in any modern list, nor does Strand give the authority on which he has introduced it into his. For the sake of the students of Biblical Natural History, who are accustomed to have plants grouped according to some more marked or popular characteristic than those which determine their place in a scientific arrangement, we will here depart from the plan we have



[Holy Bramble. *Rubus Sanctus*.]

generally followed, for the sake of bringing together the various thorny and prickly plants which are usually connected in Scriptural notices.

The various species of *Rhamnus* (including the “Christ’s thorns”) growing in Palestine have been noticed in a preceding page. The *black thorn*<sup>g</sup> or *sloe* we do *not* find named in the lists or memoranda before us, although we have an impression that some modern traveller has noticed its presence in Palestine. Towards the end of this month, Monro,<sup>h</sup> high up Lebanon, in the neighbourhood of the snows, took notice of thorns, bearing a bright pink flower, which spread themselves upon the ground, or run over the trees near them, like a creeper. Barberry bushes were noticed by this traveller in the same locality. Brambles, although not very common, occur in particular localities. Morison<sup>i</sup> notices their

<sup>a</sup> Letters, ii. 122.

<sup>d</sup> *Cratægus oxyacantha*.

<sup>b</sup> Vol. ii. p. 18.

<sup>b</sup> Travels, 342, 447.

<sup>e</sup> *C. azarolus*.

<sup>f</sup> Voyage, p. 179; also Richardson, ii. 442.

<sup>c</sup> *Pinus sylvestris*.

<sup>f</sup> *C. trygînia*.

<sup>g</sup> *Prunus spinosa*.

abundance in the neighbourhood of Sepphoris: the most valuable species of *rubus*, the raspberry, the country does not appear to possess, although there is reason to expect that it might be found in the mountains of Lebanon. The species more peculiar to Palestine, or at least to Syria, is the one which on that account bears the name of *Rubus Sanctus*, or holy bramble, of which we introduce a cut, it being one of the few plants which, in the stricter sense of the term, are "natives" of Palestine, or which, at least, are more common in that country than in any other. This species of *rubus* is the only one that occurs in Russell's catalogue of the Aleppo plants; but, besides it, Palestine possesses, as we have just seen, the common bramble, and also the *Rubus creticus*, if that be different from the *R. sanctus*; a point on which we are not assured.<sup>a</sup>

We may be excused if, for the sake of the connection we have indicated, we here also notice *thistles*, in what will certainly seem to the scientific reader an improper place. Another reason for this is, that these plants appear this month in their full growth and bloom. Thistles cover large tracts of ground, and grow to a prodigious size in Palestine; the species, however, although not distinguished by passing travellers, are not the same that are most common in this country. They are the white-flowered Syrian thistle,<sup>b</sup> and the musk-scented *carduus mollis*. But there would appear to be other species than these, although only these have been named. Clarke says, "the variety and beauty of the different species of *carduus*, or thistle, in this country, are well worthy notice; a never failing indication of rich soil in any land, but here [between Acre and Nazareth] manifesting the truth of Jacob's prophecy, who foretold the 'fatness of the bread of Asher,' and the 'royal dainties' of his territory."<sup>c</sup> We observed one in particular whose purple head covered all the inland parts of Palestine with its gorgeous hue."<sup>d</sup> This possibly may be the Egyptian, or purple variety, of the Syrian thistle. Again, the same traveller, between Nazareth and Tiberias, says, "the earth was covered with thistles in such numerous variety, that a complete collection of them would be an interesting acquisition for the botanist."<sup>e</sup> Buckingham, Richardson, and Lord Lindsay have repeated notices to the same effect. The last-named traveller describes every fallow and uncultivated field of the plain of Sharon as overgrown with "thistles of the deepest hue and most luxuriant growth, often overtopping my head on horseback: dear old Scotland can boast of none so beautiful."<sup>f</sup>

Burckhardt, travelling this month in the deserts southward of Palestine, takes much notice of the shrub *rethem*, which he says is the same as the *genista rætum* of Forskal. This, we suspect, is no other than that which we mentioned in April<sup>g</sup> under Lord Lindsay's name of *rattam*, and which we set down on the authority of Delisle as the *Spartium monospermum*. Whether the same or different, we may here set down Burckhardt's further information, which is to the effect, that whole plains are sometimes covered with this shrub, and that such became favourite places of pasturage, as the sheep are remarkably fond of the small berries which it yields.<sup>h</sup>

The frequent mention of *oak* trees, of different species, made during this month by Lord Lindsay, suggests the present as a suitable place for noticing this interesting class of trees. The observations in a preceding page<sup>i</sup> tend to reduce the number of allusions to oaks which the Scriptures have seemed to contain; but sufficient will still remain to show that this genus of trees figured conspicuously among the forest trees of Palestine. "The oaks of Bashan," in particular, are always mentioned in terms of proverbial distinction; and there, accordingly, and in other districts of the country beyond Jordan, oak trees, which are comparatively rare to the west of that river, take, even at this day, a leading part in the scenery of the wooded hills. Among these oaks, however, is not found that species<sup>k</sup> which grows to so large a size, and makes so imposing a figure among our own forest trees. All the species of *Quercus*

<sup>a</sup> The reason for the doubt is, that in the 'Flora Palestina' there is a *R. creticus*, but not *R. sanctus*, and we do not find *R. creticus* in any list that gives *R. sanctus*. In fact, we have met with no notice of the one as distinct from the other.

<sup>b</sup> *Carduus Syriacus*.

<sup>c</sup> Gen. xlix. 20.

<sup>d</sup> Clarke, iv. 128.

<sup>e</sup> Clarke, iv. 195.

<sup>f</sup> Letters, vol. ii. p. 77.

<sup>g</sup> Page ccxxviii.

<sup>h</sup> Burckhardt, 537.

<sup>i</sup> Page ccxxviii.

<sup>k</sup> *Quercus robur*.

which grow in Palestine are of much inferior size and importance, as the trees of this genus generally find colder climates than that of Syria more congenial to their nature. The species which grow in Palestine are enumerated in the 'Flora Palæstina' as below.<sup>a</sup>

The two species which are most frequently, if not exclusively, noticed by Lord Lindsay, are the "evergreen" and "prickly" oaks. We, with most persons, should understand by the



[*Quercus Valonidi*]

former the *Quercus ilex*, and by the latter *Q. valonidi*. But from such expressions as "the evergreen or valonidi oak," and "the valonidi and prickly oaks," it appears evident that the term *valonidi*, which properly applies to the prickly oak, is by him given improperly to the evergreen oak, and that which he calls, distinctively, "the prickly oak" is the real *valonidi*. This error we shall take the liberty of correcting in using his statements. He describes the hills of southern Judea, about Hebron, as covered to the top with the prickly oak. Striking across the country from Samaria towards Mount Carmel, regular English park scenery is

formed by the evergreen oak; which, together with the prickly oak, also covers the hills about the southern prolongations of Carmel and the banks of the Kishon. The traveller, journeying from Cana to Mount Tabor, strikes into a lovely valley, wooded chiefly with these same trees.<sup>b</sup> Mount Tabor itself is entirely covered with thick woods, chiefly of oak and pistachio trees.<sup>c</sup> The species of oak is not named, but is probably one or both of these. Passing the Jordan, Burckhardt<sup>d</sup> speaks gratefully of the shade afforded by the oaks of Gilead, the presence of which is probably what gives to this locality that appearance which he describes as more reminding him of Europe than aught else he had seen in Syria. In the same quarter, this traveller speaks of forests of oaks, thicker than any forests he had seen in Syria, where the term "forest" is often applied to places where the trees grow twenty paces apart from one another.<sup>e</sup> From Lord Lindsay we learn that these oaks are also of the prickly and evergreen species. With these two trees many of the hills of Bashan and Gilead are covered to their very summits, and, in descending to the arid plains, the evergreen<sup>f</sup> oak is the last by which the traveller is forsaken.<sup>g</sup> He also mentions a variety of the evergreen oak of a broader leaf than usual, and conjectures that this may be the oak of Bashan. But we believe that the term "oaks of Bashan" is not determined to any particular species; but merely indicates that country to have been distinguished for its oaks, as it actually is at this day. The hills of Bashan itself are described by the same traveller as richly wooded to their summits with noble prickly oaks, a few pine trees towering over them; and he adds, "I never could have thought that the shrub I had seen covering the hills of Hebron could have attained such size and beauty, yet the leaf of the largest tree is not larger than the shrubs." Among the trees of this district an arbutus is occasionally seen, but the prevailing trees are oaks prickly and broad-leaved, of the variety just mentioned.<sup>h</sup>

<sup>a</sup> *Quercus glauca recondita*, *Q. cupula crinata*, *Q. græmuntia*, *Q. Ilex aquifolia*, *Q. coccifera*. The four first on the authority of Poccoke, and the last on that of Hasselquist. To these we add, on the authority of Lord Lindsay, the valonidi oak (*Q. valonidi*, or *Q. agrilops*).

<sup>b</sup> Lindsay, 51, 77, 85.

<sup>c</sup> D'Arvieux, ii. 280; Burckhardt, 335.

<sup>d</sup> Syria, 348.

<sup>e</sup> Syria, 265.

<sup>f</sup> He says the valonidi; but, as explained, by that he always means the evergreen (*Ilex*).

<sup>g</sup> Lindsay, 122, 124.

<sup>h</sup> Lindsay, 127.

Oaks are very frequently mentioned by Burckhardt, but without distinguishing the species. It is interesting, however, to mark the localities in which these trees engaged his notice. There are woods of stunted oaks<sup>a</sup> on the lower slopes of the mountains (Jebel Haouran), beyond the great Haouran plain; and even in the stony district (the inner Lcdja), which completes the eastward boundary of that plain, the oak is named first among the trees which grow in great numbers between the rocks.<sup>b</sup> Burckhardt passed through a thick oak forest on the way from Feheis to the ruins of Amman (the capital of the Ammonites); and this is the most southerly notice of oaks which we have found in the country beyond Jordan.<sup>c</sup> From the dispersed notices of the same traveller it would appear that oaks of low stature are frequent in the plains and hills near the sources of that river.<sup>d</sup> He also takes notice of large oaks growing in different parts beside natural reservoirs of water fed by springs.<sup>e</sup> The eastern slopes, even to the summits of Anti-Lebanon, abound in short oak trees, of which none are higher than twelve or fifteen feet.<sup>f</sup> In Lebanon itself oaks are numerous. Its eastern ascent from the valley of Baalbec, as high as Ainnetto, is covered with low oak trees “of the round-leaved and common English species.” The natives, on and below this slope of the mountain, in constructing the flat roofs of their houses, lay branches of the oak over beams of the pine.<sup>g</sup> On the western slopes large oaks are found as high as the neighbourhood of Deir el Kammer, the residence of the Emir Beschir.<sup>h</sup>

The *Quercus coccifera*, or kermes oak, is noticed only by Hasselquist. Crossing from Acre to Nazareth, on the 2nd of May, he found the country beyond the plain of Acre consisted of small hills, or rather rising grounds, covered with plants, and fine vales between them. On approaching this he passed through “fine groves of the eastern oak (*Quercus coccifera*), whose fly, called *tenthreda*, had made its hard gall, in which lay its caterpillar, with others dried up, which the insect had already quitted.”<sup>i</sup> The insect of which he speaks is the *kermes*, one of the genus *coccus*, which sticks to the branches of the tree in the form of little red balls, the size of a pea, and which afforded a colouring matter highly valued in former times, but now out of use with the dyers, being superseded by cochineal. It transpires incidentally that this dye was used by the ancient Hebrews. For the word תולעת, *tolath*, which means a worm, and particularly the kermes worm, is used also<sup>k</sup> to denote the crimson dye prepared from it, and is accordingly rendered κοκκινον by the Septuagint in the passages indicated.

One of the noblest trees of Palestine, as indeed of any country in which it grows, is the *oriental plane*.<sup>l</sup> It is not com-



[Plane Tree.]

<sup>a</sup> These are prickly oaks, according to Lord Lindsay.

<sup>b</sup> Burckhardt, 19, 112.

<sup>c</sup> Id. 366.

<sup>d</sup> Id. 45, 312, 315.

<sup>e</sup> Id. 193, 315.

<sup>f</sup> Id. 4.

<sup>g</sup> Id. 18, 7.

<sup>h</sup> Id. 193; see also 312, &c.

<sup>i</sup> Hasselquist, 153.

<sup>k</sup> In Isa. i. 18, and Lam. iv. 5.

<sup>l</sup> *Platanus Orientalis*.

*mon* in Syria, but is mentioned with sufficient frequency to intimate that it is not rare. The enjoyment which the writer has derived from its presence, under various circumstances of rest and travel in the East, enables him to transcribe with entire sympathy and concurrence the warm praise which Mr. Urquhart<sup>a</sup> bestows upon this magnificent tree: "The platanus, the *chenar* of the Persian poets, is a tree so elegant in its form, so docile in its growth, that it gives beauty to all that surrounds it; shooting up like the poplar, when confined; spreading, when at liberty, like the oak; and drooping like the weeping willow over streams; it adapts itself to every position of soil, and assimilates itself to every style of landscape. The foliage, by the broadness of the leaves and their springing at the extremity of the branches, is bold and massive, without being dense or heavy. †Vast and airy vaults are formed within, excluding the strong light and the sun's rays; and through these verdant domes, the round, long, naked boughs, of a light green hue and velvety texture, meander like enormous snakes."

Early in this month fine large *walnut trees* may be seen bending to the ground under their loads of fruit.<sup>b</sup> The walnut tree sometimes joins with the oak to overshadow the streams beyond Jordan.<sup>c</sup>

Of *Poplars* we only know with certainty that the black poplar, the aspen, and the Lombardy poplar grow in Palestine, although from analogies almost as assured as positive facts, we should infer that the white poplar is also known there. The aspen, whose long leaf-stalks cause the leaves to tremble with every breath of wind, unites with the willow and the oak to overshadow the water-courses of the lower Lebanon,<sup>d</sup> and with the oleander and the acacia to adorn the ravines of southern Palestine.<sup>e</sup> We do not know that the Lombardy poplar (*now*<sup>f</sup> so common in England) has been noticed but by Lord Lindsay,<sup>g</sup> who describes it as growing with the walnut tree and weeping willow beside the deep torrents of the upper Lebanon. Poplars figure largely in the groves which extend for many miles around Damascus. The *poplar* is mentioned only twice<sup>h</sup> in the Scriptures, and in both places the etymology of the word would suggest that the white poplar is intended.

*Juniper* is common in Palestine, and in the valleys and mountains of Edom. On Mount



[*Juniperus Phœnicea*. Young and Old.\*]

Hor, on which Aaron died, and where his tomb is still honoured, it grows even to the summit; nor is it wanting in the renowned valley<sup>i</sup> below, in which the metropolis of Seir is entombed.<sup>k</sup> The species is not mentioned by those who supply this information; but those which have been named as growing in Palestine are the Phœnician juniper,<sup>l</sup> the common savine,<sup>m</sup> and the brown-berried juniper.<sup>n</sup> The first of these is a tree of about twenty feet high, growing with its branches in a pyramidal form. The common savine is sufficiently known as a popular medicine in some female complaints. And as to the *J. oxycedrus*, many are of opinion that its wood, rather than that of the so called "cedar of Le-

<sup>a</sup> 'The Spirit of the East,' i. 118.

<sup>b</sup> Richardson, ii. 458.

<sup>c</sup> Burckhardt, 265.

<sup>d</sup> Elliot, ii. 276.

<sup>e</sup> Mangles, 358; and with respect to poplars generally, see Rauwolf, 51, 100, 226; Richardson, ii. 246; Burckhardt, 119.

<sup>f</sup> Common as it is *now* in England, it is not above seventy years since that it was first brought from Italy by Lord Rivers in his travelling chariot.

<sup>g</sup> Vol. ii. p. 219.

<sup>h</sup> Gen. xxx. 37; Hosea iv. 13.

<sup>i</sup> Wady Mousa.

<sup>k</sup> Irby and Mangles, 378; Burckhardt, 430.

<sup>l</sup> *Juniperus Phœnicea*.

<sup>m</sup> *J. Sabina*.

<sup>n</sup> *J. Oxycedrus*.

<sup>\*</sup> The young tree is here about three feet high, of a compact pyramidal form: it afterwards spreads and reaches a height of fifteen feet. This explains the difference between them in the cut.

banon,"<sup>a</sup> is the cedar wood so famed in ancient times for its durability, and of which statues were framed before the use of marble was introduced.

Much notice is this month taken of the *acacia*, various species of which are found in Palestine, more especially in the southern parts, and in the deserts which separate it from Egypt and Arabia, as well as in these two countries themselves. Strand's list contains only four species,<sup>b</sup> which probably omits many, since Delisle's 'Flora Egyptiaca' contains not fewer than nine,<sup>c</sup> being the same, with five more. The *Mimosa Nilotica* of Linnæus, and the *Acacia Nilotica* of Delisle, or rather of Willdenow, is that which is more usually known as the *A. vera*. It was thought that *this* was the species producing the gum arabic, or that the gum was afforded by different species, either by natural exudation, or from incisions made in the bark. But it is now established that the gum is obtained from a distinct species called *Mimosa gummifera* by Forskal,<sup>d</sup> and the *Acacia gummifera* by Delisle.<sup>e</sup> This does not appear to grow in Palestine; but as the Hebrews knew and valued the product, with the plant affording which, they had ample opportunities of becoming acquainted in the deserts of Arabia Petræa, some notice of it may be taken.

The acacias (or at least one species) claims particular notice from us, from the fact of its furnishing the *shittim wood* so often mentioned in the Bible, which was exclusively employed in the construction of the tabernacle which the Israelites made in the desert: and also as producing the valuable gum, so well known under the name of "gum arabic." It has been well agreed by writers on the natural history of the Bible, that the shittim wood was afforded by a species of acacia; but the particular species has been less determinately mentioned. But now that the labours of the French commission, and of different recent travellers, have made us acquainted with the botany of Arabia Petræa, we have little difficulty in concluding that the required species is found in either the *acacia gummifera*,<sup>f</sup> or in the *A. seyal*,<sup>g</sup> or rather in *both*. They both grow abundantly in the valleys of that region in which the Israelites wandered for forty years, and both supply products which must have rendered them of much value to the Israelites. They are closely allied species, and are both distinguished from other acacias by their falciform legumes. We think the probability is that the *A. seyal* supplied the shittim wood,—if indeed that name do not denote acacia wood in general. This tree grows from fifteen to twenty feet in height. Its branches are armed with white horizontal thorns above an inch in length towards the extremity of many of the branches; but, from the base to the middle part of the branch, these are replaced by straight and very short spurs. It endures a dry soil better than most other plants, although there are situations too dry and hot for its production. Its abundance and predominance in very ancient times is evinced very remarkably by the vast quantities of petrified trunks which are found in particular situations. This has been alluded to in an early page,<sup>h</sup> and it is further remarkable that were it not for the presence of a few date trees, nearly the whole of these petrifications may be ascribed to the acacia. The wood is not very well suited to the uses of the carpenter; but it is the best, if not the only sort, which its locality supplies; and this fact sufficiently explains the use made of it in the works of the Tabernacle. It thus also appears that the "shittim wood" was not some costly foreign timber, as cursory readers of the Bible are apt to conclude; but was that which was the most easily obtained one of *A. Nilotica* was and is much valued by the Egyptians for the planks and masts of boats, the handles of offensive weapons of war, and various articles of furniture. To the same purposes it is still applied. The legumen of the acacia was also highly valued for its use in *tanning*.<sup>i</sup> But it was the pod of another species (*A. Nilotica*) rather than of this which the ancient Egyptians employed for this purpose. It is probable, however, they used for the same purpose the *bark* of this desert acacia, which is, for it, as valuable as the pod of any other. The Arabs of the desert now use the epidermis of the *seyal*, and the wood of the

<sup>a</sup> *Pinus cedrus*.

<sup>b</sup> *Mimosa Nilotica, M. Senegal, M. farnesiana, M. lebbeck*.

<sup>c</sup> *Acacia lebbeck, A. farnesiana, A. Nilotica, A. albidia, A. seyal, A. gummifera, A. pataocarpa, Mimosa Senegal, M. stellata*.

<sup>d</sup> In the 'Flora Egyptiaca-Arabica.'

<sup>e</sup> In 'Flora Egyptiaca,' as above.

<sup>f</sup> Called by the Arabs *tath*.

<sup>g</sup> *Seyal* is the Arabic name.

<sup>h</sup> See before p. lxi.

<sup>i</sup> And also the *A. gummifera*.

errin,<sup>a</sup> for tanning. Of the inner rind of the *former*, they also, as did the ancient Egyptians, frequently make thin but strong ropes. Its wood also furnishes the best charcoal, and large quantities of it, with other shrubs and brushwood,<sup>b</sup> are burnt yearly by the Arabs of Sinai and taken to Cairo for sale. Burckhardt<sup>c</sup> says, that the pods of this shrub as well as its tenderest shoots serve as fodder to the camels.

This tree produces the gum arabic, as do most of the other species of acacia. But the proper and valued sort is afforded by the *A. gummifera*, which is even more abundant than the *seyal* in Arabia Petræa. In May the acacias in this region are thickly covered with the gum. In summer the Bedouins collect the gum produced in this quarter, which they sell at Cairo for thirty or forty patachs the camel load, or about twelve or fifteen shillings per cwt. English. The gum is of very inferior quality to that of Sennaar. Burckhardt's companions ate up all the small pieces that had been left upon the trees by the road side. The traveller found it to be quite tasteless, but was assured that it was very nutritive.<sup>d</sup> The Bedouins pretend that upon journeys it is a preventive of thirst, and that the person who chews it may pass a whole day without being inconvenienced by the want of water.

The same traveller, when journeying in the desert, which is still called El Tyh from the memory of the Hebrew wanderings, rested in the Wady Lahyane, where many of these trees grew. Here he met with a few Arab families who had chosen this place that their camels might herd upon the thorny branches of the gum arabic tree, of which they are extremely fond. These poor people had no tents with them, and their only shelter from the burning rays of the sun and the heavy dews of the night, was afforded by the scanty branches of the acacias. The ground was covered with the large thorns of these trees; and as this and other species of acacias abound in the desert, the thorns are a serious annoyance to the Bedouins and their cattle: in consequence, every Bedouin carries in his girdle a pair of small pincers to extract the thorns from his feet; for they have no shoes, and use a sort of sandal made of camel's skin, and tied on with leathern thongs.

We must now proceed to notice some trees and shrubs which we know only by native names and imperfect descriptions, and which we are therefore unable so to identify as to give them the place and name which they have very probably found in botanical catalogues. We have in vain sought the botanical synonyms of the native names which are given; but having these before them, some of our readers may be more fortunate than ourselves.

And first there is the *Zaarour* tree, which grows in considerable profusion in Syria and the southern deserts; but is rare, if it exists, in Egypt. It is found in Palestine, at least beyond Jordan. *Zaarour* is the name given to it by the inhabitants of Lebanon, while the people of Damascus call it *Zaaboub*; and the Arabs have also another name for it which Burckhardt forgot, unfortunately, as we might with that name have been able to identify it. It bears a fruit like a small apple, very agreeable to the taste; the size is more clearly stated elsewhere, as that of a small cherry, with much of the flavour of the strawberry. It is in bloom in May.<sup>e</sup>

The *Aszef* is spoken of this month by Burckhardt, while travelling in the Sinai peninsula. On noticing its presence in Wady Kheysey, he describes it as a tree which he had already seen in several other wadys. It springs from the fissures in the rocks, and its crooked stem creeps up the mountain side like a parasitical plant. According to the Arabs it produces a fruit of the size of the walnut, of a blackish colour, and very sweet to the taste. The bark of the tree is white, and the branches are thickly covered with small thorns: the leaves are heart-shaped, and of the same shade of green as those of the oak.<sup>f</sup>

Advancing towards Kerek from the southern extremity of the Dead Sea, Captains Irby and

<sup>a</sup> *Rhus oxycanthoides*.

<sup>b</sup> The shrub *Genista ratam* of Forskal, called by the Arabs *rethem*, is also much sought after for this purpose. Burckhardt, 483.

<sup>c</sup> Syria, 474.

<sup>d</sup> For the preceding account of the acacia the authorities are—*Descript. de l'Egypte*, tom. xix. pp. 111, 384; Burckhardt, 442, 462, 476, 477, 479, 493, 496, 503, 505, 533; Hasselquist, 131; Rauwolff, 102, 126, 152, 178, 233; Morison, 81; Mariti, 124; Wilkinson's 'Topography of Thebes,' 210, 211; and 'Ancient Egyptians,' iii. 168.

<sup>e</sup> Burckhardt, 83, 275, 569.

<sup>f</sup> Syria, 536, 537.

Mangles soon, on leaving the borders of that sea, entered "into a very prettily wooded country with high rushes and marshes. Leaving this, the variety of bushes and wild plants became very great: some of the latter were rare and of remarkable appearance. Occasionally we met with specimens such as none of our party had seen before; a botanist would have had a fine treat in this delightful spot. Amongst the trees which we knew, were various species of the acacia, and in some instances we met with the dwarf mimosa; we saw also the *doom*,<sup>a</sup> and the plant which we saw in Nubia, and which Norden calls the *oschar*.<sup>b</sup> There was one curious tree which we observed in great plenty, and which bore a fruit in bunches, resembling in appearance the currant, with the colour of the plum. It has a pleasant although strongly aromatic taste, exactly resembling mustard; and, if taken in any quantity, produces a similar irritability of the nose and eyes to that which is caused by taking mustard. The leaves of the tree have the same pungent flavour as the fruit, although not so strong. We think it probable that this is the tree our Saviour alluded to, in the parable of the mustard seed, and not the mustard plant which we have in the north; for although in our journey from Bysan to Adjeloun we met with the mustard plant, growing wild, as high as our horses' heads, still, being an annual, it did not deserve the appellation of 'a tree;' whereas the other is really such, and birds might easily, and actually do, take shelter under its shadow."<sup>c</sup>

This discovery will be of much interest to those who are aware of the great difficulty which has been experienced in identifying the tree to which our Saviour alludes, when comparing the kingdom of heaven to "a grain of mustard seed, which a man took and sowed in the earth, which is indeed the least of all seeds, but when it is grown, is the greatest among herbs, and becometh a tree, so that the birds of the air come and lodge in the branches thereof."<sup>d</sup> The Jewish writers speak of a mustard tree, common among them, in quite corresponding terms, seeming to show that a species of the *sinapis* or some analogous genus, existed in Palestine, with which we are not well acquainted; and which may very probably prove to be that which Captain Mangles has pointed out. It is to be regretted that he did not make himself acquainted with its name. As to the more common species of mustard, of which he incidentally speaks, we may as well mention here (although rather out of place among "trees and shrubs") that it was probably the *Sinapis Orientalis*, attaining, under a favouring climate and circumstances, a stature which it will not reach in our climates. This species is common in Palestine. In essential character it differs little from the *Sinapis arvensis* (which supplies the "Durham mustard"), being distinguished chiefly by the beak only of the pod being smooth.

[*Sinapis Orientalis*.]

**THE VINE.**—Although the vintage itself does not begin before September, still quantities of grapes are gathered for the table from the latter end of May until that season.<sup>e</sup> The

<sup>a</sup> Not the doum-palm.—*Crucifera Thebaica*.

<sup>b</sup> This is the native name of the *Asclepias procera*, or bell-flowered gigantic swallow-wort.

<sup>c</sup> Travels, 353.

<sup>d</sup> Matt. xiii. 31, 32.

<sup>e</sup> Thevenot, ii. 62.



early grapes thus supplied were accounted great delicacies by the Hebrews, and were doubtless among the "first ripe fruits" which the bride in the Canticles desired; and if she were an Egyptian princess, this desire may have been the more strongly entertained, as the grapes of Egypt are very inferior to those of Palestine. In that tender poem, the time of which is evidently the spring of the year, there are other allusions to this as one of the characteristics of spring, or rather early summer: as, "The vines with the tender grape give a good smell;"<sup>a</sup> and just after, "Take us the foxes, the little foxes, that spoil the vines; for our vines have tender grapes."<sup>b</sup> And again the bridegroom says:—"I went down into the garden of nuts, to see the fruits of the valley, to see whether the vine flourished and the pomegranates budded."<sup>c</sup>

**GRAIN.**—We stated under April that May is the great harvest month in Palestine; and instead of occupying our space with proofs of what the reader, after the repeated statements already made, will be disposed to admit, some account of the harvest operations of Syria will probably be considered more acceptable. At p. 91 there is a cut representing a harvest scene near Cana of Galilee; and in pp. 375, 376 several cuts are furnished, showing the manner in which such operations were conducted by the ancient Egyptians, which approximate very closely to those still in use, as well as to those which the Scriptures evince to have formed the agricultural practice of the Hebrews. We shall illustrate such of these as the occasion brings before us.

To every reader of the Bible it must be obvious that the culture of corn engaged a very large share of the attention of the ancient Hebrews. Indeed, with the facilities which they possessed of sending their flocks and herds to pasture in the deserts, it is probable that when the country was in its best and most flourishing condition, none but lands absolutely uncultivable were abandoned to pasturage. The corn of Syria well deserves to be, as it then was, a primary object of attention to the inhabitants; for, under the congenial clime and in the generally congenial soil which that country offers, there are few countries in which corn of

better quality is produced. This was of old well understood at Rome; Pliny<sup>d</sup> assigns the third rank to its wheat, and even classes it above the wheat of Egypt. And this comparison could easily and well be made at Rome which derived its supply of corn from the different provinces of the Empire.

The allusions to the *different* qualities of wheat which the Scriptures contain, and the mention of such a rate of return for the grain sown as seems extraordinary to us, gives great interest to the discovery by Captain Mangles of a species of *bearded wheat* in Palestine his statement concerning which we transcribe. When at Heshbon, beyond Jordan,



English.

Asia Minor.

Heshbon.

[Ears of Wheat.]

<sup>a</sup> Sol. Song, ii. 13.

<sup>b</sup> Sol. Song, ii. 15.

<sup>c</sup> Sol. Song, vi. 11.

<sup>d</sup> Nat. Hist. xviii. 7.

"A man brought some wheat to parch, and, to our surprise, we observed the ears of an unusual size, one of them exceeding in dimensions two of the ordinary, and on one stalk. Mr. Legh procured some, which he brought to England, and it has succeeded very well. We have since learned that it was not wholly unknown to botanists. It is a bearded wheat." It is evidently to this that Laborde also alludes in stating:—"There is to be found at Kerek a species of hundred wheat which justifies the text of the Bible against the charges of exaggeration of which it has been the object." Of one of these ears of corn a figure is given, contrasted with a grain of English wheat, which, it must be confessed, has not been very fairly chosen. To this we have added an ear of the bearded wheat, which is the only kind grown in Asia Minor. Captain Mangles annexes to his engraving the following comparative statement:—

	HESHON WHEAT.	ENGLISH WHEAT.
<i>Weight</i> . . . . .	130 gr. or 1 dr. 2sc. 3 gr.	43 gr. or 8 dr. 2 sc. 2 gr.
<i>Length of Straw</i> . . . . .	5 feet 1 inch.	4 feet 2 inches.
<i>Number of Grains in Ear</i> . . . . .	84	41

It would be interesting to know to what extent this wheat was cultivated by the ancient Hebrews, and may have been the subject of the Scriptural allusions to which we have adverted.

Russell says:—"The barley harvest commences early in May, ten days or a fortnight before that of the wheat; and early in June most of the corn of every kind is off the ground. Wheat, as well as barley, in general does not grow half so high as in Britain, and is therefore like other grain, not reaped with the sickle, but plucked up with the root by the hand. In other parts of the country, where the corn grows ranker, the sickle is used"<sup>a</sup> This is important, as showing the reasons for the different processes being contemporaneously used, by which some enquirers have been perplexed. The cuts at p. 375 show that the same reason operated anciently, for there the tall stalked grain is cut with the sickle, while the shorter kind is plucked up by the roots. Both modes of operation are indicated in the Scriptures; but there, as the corn grows higher generally than in the neighbourhood of Aleppo, to which Russell's statement more particularly refers, the sickle was and is more generally in use, and the allusions to it are more frequent.<sup>b</sup>

It was not properly in Palestine, but as far north as Tripoli, that Maundrell noticed the practice of plucking up the corn; and although he speaks of it as a general practice, it is evident from his own statement that he had not made this observation at any more southern portion of his journey. We adduce the passage, as it is usually copied as of final authority on the subject. It is dated May 11th o. s. (21st n. s.):—"All that occurred to us in three days' travel was a particular method used by the country people in gathering their corn, it being now harvest time. They pluck it up by handfuls from the roots; leaving the most fruitful fields as naked as if nothing had ever grown on them. This was their practice in all places of the East that I have seen;<sup>c</sup> and the reason is that they may lose none of their straw, which is generally very short, and necessary for the sustenance of their cattle, no hay being here made. I mention this, because it gives light to that expression of the Psalmist, 'Which withereth afore it be plucked up;'<sup>d</sup> where there seems to be a manifest allusion to this custom. Our new translation renders this place otherwise; but in so doing it differs from most, if not all, other copies, and here we may truly say, 'the old is better.' There is indeed mention of a mower in the next verse, but it is such a mower as fills not his hand, which confirms rather than weakens the preceding interpretation." This is all correct, subject to the understanding that the corn is cut wherever the stalk rises high. It will be noted that in the comparative measurements just given, the Heshbon wheat, although its rate is double in all other respects, is a foot shorter than the English wheat in length of straw.

<sup>a</sup> Hist. Nat. xviii. 12.

<sup>b</sup> Nat. Hist. of Aleppo, i. 74.

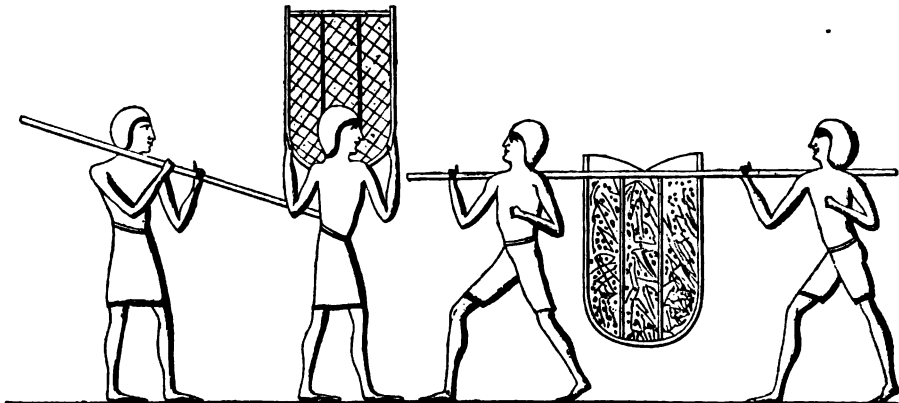
<sup>c</sup> Too much stress must not be laid on this. He had but "newly come to Aleppo" when he undertook his journey to Jerusalem, and his travels in Palestine were prior to the commencement of harvest.

<sup>d</sup> Psalm cxxix. 6.

The reapers go out into the fields very early in the morning, and return home soon in the afternoon. The certainty of favourable weather renders unnecessary the haste and the long continued labour, with which the corn is got off the ground in a less steady climate and in a season when the weather is more variable. They take provisions along with them, and leathern bottles, or dried gourd bottles, full of water. Among the Hebrews, refreshments for the reapers appear to have been provided by the owner of the field. The reapers of Boaz had vinegar and water to cool their thirst, and parched corn for their food ;<sup>a</sup> and in the apocryphal story of Bel and Dragon we find a Jewish prophet named Habakkuk, who had made pottage, and had broken bread in a bowl, which he was taking to the field to give to his reapers. From the cut at p. 375 it would appear that in ancient Egypt also drink at least was provided by the master.

Gleaning in the harvest field has engaged our attention as a matter of law.<sup>b</sup> It appears that the right of gleaning was not, among the Hebrews, exercised without reference to the will or permission of the owner, which however probably only operated in limiting the number of gleaners in a particular field. At present the reapers are followed to and in the field by their own children, and others. They glean with much success, although probably not equal to that of the Hebrew gleaners, who had a right to even the sheaves which might be dropped, or which had been left behind.

That the Hebrew reapers bound the corn into sheaves has already been shown,<sup>c</sup> and illustrated by pictorial examples from Egypt. The sheaves were never set up in shocks, as with us, although the public version of Judges, xv. 5, and Job v. 26, might convey that impression. But the word rendered "shock" in those passages signifies neither a shock composed of a few sheaves standing in a field, nor a stack of many sheaves in the barn-yard, probably thatched, so as to stand for a length of time ; but a heap of sheaves laid loosely together in order to be threshed out as quickly as possible. From a difference as exhibited in the Egyptian paintings, we think we can collect that the corn was bound into sheaves when the threshing-floor was at some distance from the field ; but that when it was close at hand, the corn was conveyed to the floor in a loose state, in large baskets borne by two men, as shown in



[Carrying Corn.<sup>d</sup>]

the annexed engraving. At present, in Syria, the corn is most usually carried to the threshing-floor on asses.

Dr. Russell mentions a curious custom peculiar to the reapers, and which prevails throughout Syria. It bears some resemblance to what, in some English counties is called a *Largess*.

<sup>a</sup> Ruth, ii. 14.

<sup>b</sup> See the General History, p. 296.

<sup>c</sup> See the History, pp. 107.

<sup>d</sup> In this cut two men are conveying a load of corn in the large basket; the other two are returning for another load, after having discharged at the threshing-floor that which they previously bore. One carries the basket, and the other the pole. In the original the mirthful expression which has been thrown into the countenances of the men is more observable than in our copy.

When a traveller happens to pass a field where the reapers are at work, they dispatch one of their number with a handful of corn, which he offers to the traveller, at the same time taking hold of the horse's bridle. The messenger runs as fast as he can, and from the moment of his setting out continues calling with a loud voice, *Sha-bash! Sha-bash!* which words are repeated by the whole band. A small present is expected in return for this compliment, and when received, the messenger holding up his hands as a signal, the women join in a general *ziraleet*<sup>a</sup> by way of thanks.<sup>b</sup>

THRASHING is the operation which next requires attention. The floor, as in the times to which the Scriptures refer, is in the open air, and is such a level and hard piece of ground as can be found nearest the harvest field. If on the top of a hill, it is preferred for the advantage of the subsequent winnowing. For use as the regular threshing-floor of the estate, this spot is often prepared by the removal of about six inches deep of the soil, and filling up the vacancy with a firm compost made of cow-dung and clay.

Such threshing-floors were common almost everywhere, being only covered in those countries where showers are frequent in the time of harvest.<sup>c</sup> The Roman writers give ample instructions as to the manner of preparing the threshing-floors. Varro says the threshing-floor ought to be on high ground, much exposed to the wind, large enough for the extent of the fields of corn, as round as possible, and raised in the middle, so that the rain which falls upon it may the sooner and more easily find its way off. He adds, as the reason for making it round, that, in a round figure, the distance is shortest from the middle to an extremity; but doubtless the advantage of driving circularly the animals employed in the operation afforded a share of the reason for this figure of the threshing-floor. Having thus described the situation and form of the *area*, he proceeds to describe the manner of preparing it: "It ought to be laid with solid earth, and well beaten (particularly if laid with potter's clay, *argilla*), so that the heat may not open it in chinks, and the grain falling into these chinks lie hid, the rain water be received, and a passage opened for ants and mice. It is also usual to sprinkle it with *amurca*, which is a poison to ants and moles. Some persons, that the floor may be very firm, surround it with a stone wall, and lay it with a stone pavement.<sup>d</sup> In some places the area is covered, as in *Bagienna*,<sup>e</sup> because in that country, through the whole harvest season, there are frequent showers; and, where it is not covered and the climate hot, a shade ought to be made near it, for the workmen to repose themselves during the mid-day heat."<sup>f</sup>

There is no intimation that the threshing-floors were paved among the Israelites; and the sole reason for which the covering of threshing-floors is recommended, did not exist in that country.<sup>g</sup>

In such floors the separation of the grain from the straw was effected by the different processes which remain to be described.

1. *By the treading of cattle.*—This appears to have been the most ancient practice for the larger grains, of wheat, barley, and rye. It is in fact the only process of threshing to which allusion is made in the books of Moses, as in the celebrated precept, "Thou shalt not muzzle the ox that treadeth out the corn,"<sup>h</sup> an injunction conformable to the existing practice of all the nations of the East, none of whom, whatever be the mode of threshing, muzzle the animals which labour in it. It is seen by the cut at p. 376 that threshing by the feet of cattle was also the practice in ancient Egypt. Homer mentions no other mode of threshing than by

<sup>a</sup> A rejoicing shout made by women.

<sup>b</sup> Nat. Hist. of Aleppo, i. 75.

<sup>c</sup> Varro, lib. i. cap. 51.

<sup>d</sup> Columella says that the best floors are there paved with flint-stones, because by this the corn is more quickly rubbed out, as the floor does not yield to the pressure of the hoofs of the cattle or of the tribula; and likewise because it is much cleaner and freer from the small stones and gravel, which an earthen floor almost always throws up in threshing. *De Re rustica*, lib. ii. cap. 20.

<sup>e</sup> A district of Armenia Major.

<sup>f</sup> Varro, lib. i. cap. 51.

<sup>g</sup> Besides Varro, the reader can also consult Cato, 'De Re rustica,' cap. xci. et cxix.; Virgil, *Georg.* i. v. 178, &c.; Columella, lib. i. cap. 6; Palladius, lib. i. tit. 36. These ancient works on agriculture were printed in one folio volume as long since as 1496, under the title of *Opera Agricultorum*, forming a body of valuable information from which a diligent student might glean much information respecting the agricultural practices mentioned in Scripture.

<sup>h</sup> Deut. xxv. 4.

driving oxen over the corn. He compares the slaughter made by the horses and chariot of Achilles to the beating out of grain by the trampling of oxen :—

“ As when the peasant his yok'd steers employs  
To tread his barley, the broad-fronted pair  
With ponderous hoofs soon triturate the grain.—  
So, bearing terrible Achilles on,  
His coursers stamp'd togeth'er, as they pass'd,  
The bodies and the bucklers of the slain.”<sup>a</sup>

It was also one of the modes in use among the Romans. Among them, however, horses were preferred to oxen for this work,<sup>b</sup> and there can be no doubt of their superior adaptation to it; but the Hebrews for many ages had no horses, and when they had, did not soon learn to employ them in any agricultural labour. Neither did the Egyptians. But horses appear to have been employed for threshing in the time of Isaiah.<sup>c</sup>

At the present time the custom of threshing by the treading of animals is common in



[Threshing by Animals.]

Northern Africa, and several parts of the East; but horses are more employed than oxen. In this case a strong post is planted in the centre of the threshing-floor, with a movable wooden ring at top, through which passes the cord that yokes the animals, and which can be lengthened or shortened at pleasure, so as to make them move round in a wider or narrower compass. So Shaw, in describing the practice of the Moors and Arabs of Barbary, states: “These nations continue to tread out their corn after the primitive custom of the East. Instead of beeves they frequently make use of mules and horses, by tying, in like manner, by the neck, three or four of them together, and whipping them afterwards round about the *nedders*,<sup>d</sup> as they call the threshing-floors, where the sheaves lie open and expanded, in the same manner as they are placed and prepared by us for threshing. This, indeed, is a much quicker way than ours, though less cleanly. For as it is performed in the open air,<sup>e</sup> upon any round level plot of ground, daubed over with cow-dung, to prevent, as much as possible, the earth, sand, or gravel from rising; a great quantity of them all, notwithstanding this precaution, must be unavoidably taken up with the grain. At the same time the straw, which has been taken notice of as their chief and only fodder, is hereby shattered to pieces; a circumstance very pertinently alluded to in 2 Kings xiii. 7, where the king of Syria is said to have made the Israelites ‘like the dust by threshing.’”<sup>f</sup>

2. Another kind of threshing is by *the drag*, being a strong frame of planks, or large block of wood, armed and roughened at the bottom with flints or pieces of iron, and drawn by oxen,

<sup>a</sup> Hom. II. lib. xx. v. 495, &c. Cowper's translation, v. 593, &c.

<sup>b</sup> Columella, ii. 21; Virgil, Georg. iii. 132.

<sup>c</sup> Isa. xxviii. 28.

<sup>d</sup> The figure and use of the *nadder* seems to be implied.—1. In the Hebrew name גרן, *goran*, from whence, perhaps, the Greek γυρας, and the Latin *gyrus*; 2. In the Greek appellation ἀλων; and, 3. In the Ethiopic, *awdy*; viz., from whipping the cattle that tread out the corn round about, or in a circle.

<sup>e</sup> Hos. xiii. 3.

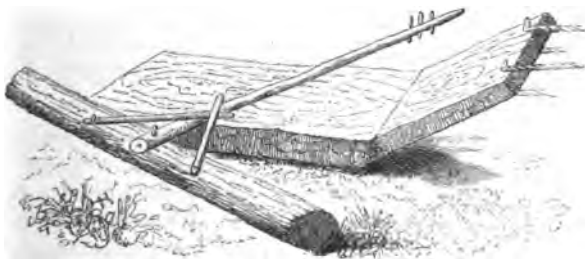
<sup>f</sup> Shaw, i. 254.

mules, or horses, over the corn sheaves spread on the floor, the driver sitting upon it when its form allowed him to do so. This corresponds with the notice which Varro takes<sup>a</sup> of the *tribulum*, and he says that when the driver did not sit on the machine a weight was placed upon it. This very simple machine is evidently that which Laborde saw actually in use in Syria, and of which he gives the representation which we have copied in the preceding engraving.



[Threshing by the Drag.]

A corn-drag, somewhat less rude than this, is now generally used in Syria and Asia Minor.



[Threshing Drag of Syria and Asia Minor.]

A figure of it, which we have copied, is given in the recent work on that country by Mr. Fellowes,<sup>b</sup> who describes it as designed for the joint purpose of threshing and of cutting the straw. "It is very primitive and curious, consisting of a thick plank of timber, flat on the ground, with another smaller one inclining upwards, to which the animal is attached for the purpose of dragging it over the corn,

which is spread out on the hard rocky ground; the flat under side is stuck full of flints or hard cutting stones, arranged in the form of the palate or rough tongue of the cow. The roller is the trunk of a tree, often weighed by the driver riding on it. It is dragged over the

ground; but does not revolve." Dr. Wilde,<sup>c</sup> who travelled in Palestine too early to see the act of threshing, notices a similar machine which he saw in a vaulted granary near Tyre. Both these travellers identify this, very rightly, with the threshing instrument mentioned by Isaiah, xli. 15,<sup>d</sup> and the *tribulum* of Virgil.<sup>e</sup>



[Threshing by the Sledge.]

3. A third mode of threshing was by what is called in Scripture "the wain," more properly "the sledge," and which is still employed in Egypt and some parts of Western Asia. This sledge

<sup>a</sup> Lib. i. cap. 52.  
<sup>b</sup> 'Journal written during an Excursion in Asia Minor,' by Charles Fellowes, 1838.  
<sup>c</sup> Wilde's 'Narrative,' ii. 123. See also Paxton, 44. After describing it, he says,—"This is the common threshing instrument of these countries. I see it everywhere; and I see no other."  
<sup>d</sup> "Behold, I will make thee a new sharp threshing instrument having teeth: thou shalt thresh the mountains, and beat them small, and make the hills as chaff."  
<sup>e</sup> Georgics i. 164.

is fixed upon two or three wooden rollers, armed with several iron rings with serrated edges, so sharp as to cut the straw. This machine, which is drawn by oxen, mules, or asses, is easily driven by a man seated on the sledge, and as it passes round in a circle over the corn spread beneath, the grain by repeated operation is trodden out, while the straw is chopped by the iron rings. This corresponds to a variety of the *tribulum* mentioned by Varro, and which he described as "a plank with little rollers in place of teeth." He adds: "In Hither Spain (*Hispania Citeriore*), and other places, a man sits upon this machine, and drives the cattle that draw it."<sup>a</sup> He says this was called the *postellum Pœnicum*, or Carthaginian wain; and as the Carthaginians, doubtless, derived it from their Phœnician or Canaanitish ancestors, a very proximate origin is found for it. It was undoubtedly in use among the Jews.

4. The reduction of the straw to a state which makes it fit for the food of cattle, by the same act which separates the grains from it, is an effect which would recommend the above processes, even were they more troublesome than other processes which would separate the grain only without breaking the straw in pieces. *The flail* therefore is and has been only used in ancient times, and still in Eastern parts, with grains of those sorts in which the ears only are reaped, or when the separation of the grain from the ear is the sole object desired. In our own country, on the other hand, where straw is not used for fodder, and the separation of the corn only is desired, the use of the flail is the most natural and obvious process, and those which have engaged our attention, would in two ways be injurious:—first, by rendering the straw useless for the purposes to which we apply it; and then by a waste of the time and labour in reducing it to that useless state. Correspondingly is the instruction of Columella:—"When the ears only are reaped, they may be carried to the barn, and afterwards, during the winter, beaten out with flails, or trodden out by cattle. But if it be found convenient to beat out the corn in the *area* (or open threshing-floor), there is no doubt but this work is better performed by horses than by oxen, and if there are few of these, a *tribula* or *traha* may be added, either of which very easily bruise the straw. When ears only are threshed this is best done with flails."<sup>b</sup>

Accordingly we find from the Scriptures,<sup>c</sup> that the flail was confined among the ancient Hebrews to the threshing of the smaller grains, such as vetches, dill or cummin, in which no operation upon the stalk was desired.

The passage of Scripture to which we have just referred contains distinct allusions to *all* the processes of threshing here which have been described, and may here be adduced, as given in the improved translation of Bishop Lowth:—

"The dill is not beaten out with the corn drag;  
Nor is the wheel of the wain made to turn upon the cummin.  
But the dill is beaten out with the staff;  
And the cummin with the flail: but  
The bread-corn with the threshing wain:  
And not for ever will he continue thus to thresh it;  
Nor to vex it with the wheel of his wain;  
Nor to bruise it with the hoofs of his cattle."

It is seen how clearly the preceding statements apply to and illustrate this interesting passage of Scripture.

WINNOWING.—It has already been observed that the threshing-floor was, and is, as far as practicable, situated in such a manner as to have the benefit of any wind that should blow. Columella says:—"When the corn is mixed with the *palea*,<sup>d</sup> these ought to be separated in the wind: for this purpose the west-wind is reckoned the best, which blows softly and equally through the summer months. However, to wait for this wind is the sign of a slothful husbandman; for while he is expecting it, he may be overtaken by a severe storm; therefore in the *area* the corn that is threshed should be so heaped up, that it may be cleaned with any wind; but if for many days the weather should continue quite calm, the corn must be cleaned

<sup>a</sup> Var. lib. i. cap. 52.

<sup>b</sup> Colum. lib. ii. cap. 21.

<sup>c</sup> Isa. xxviii. 27, 28.

<sup>d</sup> *Palea*, the straw taken with the ears in reaping, as distinguished from that left in the ground.

by vans, lest after a calm a severe tempest should destroy the labours of the whole year.”<sup>a</sup> All this applies equally to Syria, excepting the conclusion; for in that country the more equable summer climate prevented that care which rendered the use of the van occasionally necessary in more western climes. We are sensible that the word “fan” occurs as applied to winnowing, in the current version of the Scriptures; but it is agreed among critics that this translation of the word is incorrect, as a winnowing van would be too cumbersome a machine to be carried *in the hand*, as the passages referred to describe;<sup>b</sup> and that it really means a *winnowing shovel*, which, with a pitchfork, were the instruments employed for throwing the mixed mass across the wind, whereby the chaff was blown off to some distance, while the grain fell to the ground. The chaff of the threshing-floor is constantly alluded to as being carried away *by the wind*.<sup>c</sup> No “fans” for producing an artificial blast for winnowing corn are now or (that we can discover) ever were employed in the East. There is not, for instance, any trace of such an instrument in the paintings and sculptures of Egypt, in which the whole agricultural processes of the Egyptians are clearly displayed. A representation of *their* process of winnowing is shown in the cut at p. 376.

It is probable that the fork was used in winnowing corn, when the straw had only been bruised by the feet of the cattle: and the shovel when it had been cut up by the drag or the sledge. The process of winnowing in Syria, where the drag and sledge are used in threshing, is thus described by Russell:—“The chaff and bruised spikes are now separated from the grain by throwing the whole up into the air with wooden shovels, when the wind blows moderately. The cleaner grain being deposited together with the chopped straw, in a heap by itself, the spikes imperfectly trodden are again submitted to the sledge. After some days, the grain being more perfectly winnowed and separated from the straw, is thrown again into a large heap, called the *Bydre*, where it remains to be divided between the landlord and the husbandman, in the proportions established by agreement.”<sup>d</sup> We presume that the further process of separation to which he alludes includes the use of the *sieve*; although the winnowing effectually separates the chaff from the grain, all the earth and gravel which is liable to mix with it in their process of threshing necessarily falls with the latter to the ground, and requires a further and different process of purification: this is by the sieve, the use of which among the Hebrews is evinced by Isa. xxx. 24:—

“ Then shall thy cattle feed in large pastures,  
And the oxen and the young asses that till the ground  
Shall eat well-fermented maslin,  
*Winnowed with the van<sup>e</sup> and the sieve.*”—LOWTH.

So also Amos (ix. 9), “I will sift the House of Israel among all nations, *like as (corn) is sifted in a sieve*, yet shall not the least grain fall upon the ground.” That the sifting of *corn* is here meant (although the word is not in the original) appears from this, that in sifting meal or flour, these fall to the ground, while the husk or bran remains in the sieve; whereas in sifting corn, the grain is preserved in the sieve, and the dust and small seeds of weeds fall to the ground. The same fact is distinctly intimated in our Saviour’s declaration to Peter, “Simon, Simon! Satan hath desired to have you that he may sift you as wheat.”<sup>f</sup> Columella<sup>g</sup> probably refers to and explains this further purification by the sieve, when he says:—“If corn is to be laid up for years, it ought to be again cleaned; for the cleaner it is the less liable to be hurt by the weevil. But if it be intended for immediate use, there is no need of this second dressing: it is enough to have it exposed a little in the shade, and then laid up in the granary.”

GRANARIES.—Some attention has already been given to this subject in the notice and pictorial illustration of Egyptian granaries at pp. 122, 123. We shall now copy a passage in

<sup>a</sup> Colum. lib. ii. cap. 21.

<sup>b</sup> Matt. iii. 12; Luke iii. 17.

<sup>c</sup> See Job xxi. 18; Psalm i. 4; Isa. xxix. 5, and xxxv. 5; Hos. xiii. 3.

<sup>d</sup> Hist. of Aleppo, i. 76.

<sup>e</sup> Although Lowth translates the word “van,” he understands, according to his own note on this, that “the van of the ancients was a large instrument, something like a shovel, with which they tossed the corn, mixed with the chaff and chopped straw.” So we have explained it in the preceding statement

<sup>f</sup> Luke xxii. 31.

<sup>g</sup> Lib. ii. cap. 21.



which Varro describes the granaries anciently in use, *all* of which appear to have been *successively* known to the ancient Hebrews, including those now used in Syria, and which seem best suited to the climate and to the wants and habits of the people. "Wheat ought to be laid up in high granaries, exposed to the east and north winds, upon which no moist air from the neighbouring places blows. The walls and floors ought to be well secured with marble plaster, at least with plaster made of clay and *amurca*,<sup>a</sup> mixed with the chaff of corn. This does not suffer either mouse or worm, and makes the grain more firm and solid. . . . Some have caves below ground for granaries, as in Cappadocia and Thrace. Others have wells, as in Hither Spain, in the country about Carthagina and Osca: they strew the floors of these with *palea*, and are careful not to allow any moisture to get in, or even air, except when they take out the corn; for wherever the air does not penetrate no weevil is bred. Wheat laid up in this way remains good even fifty years, millet more than a hundred. Some make very high granaries in the fields, as in Hither Spain and in Apulia. And some make them in such a manner as to be ventilated not only from the sides, through the windows, but also from below through the floor."<sup>b</sup>

The subterraneous granaries or *wells* mentioned in this extract may be traced to Syria and the Phœnicians, through the Carthaginians; and it is in these that Varro describes the grain as being so long preserved in a sound condition. This could only be the case in dry climates, or where the ground is not so saturated by rains as to render such depositories damp. Accordingly they are confined to comparatively dry climates, while in those that are moist granaries built above ground are preferred. The saturation of the ground, caused by the inundations of the Nile, occasioned built granaries to be preferred in Egypt. And although, from the example of the Egyptians and the Romans, such also found their way into Syria, the subterraneous stores were more *native* to the country, and are those which are still in use.

"The grain is transported from the threshing-floor in sacks to the granaries, which are large subterraneous grottoes or cellars, with one round opening at top; and this being close shut, when the magazine is full, is covered over with earth, in such a manner as to remain completely concealed from an enemy. These magazines are sometimes found in the middle of a ploughed field, sometimes on the verge, nay even in the middle of the highway; and as they are often, when empty, left carelessly uncovered, travelling near the deserted villages, in the night, becomes extremely dangerous. The grain, which in general is of excellent quality, and perfectly dried before it is laid up, is well preserved in these granaries. It is not subject to vermin, except when kept too long, which avarice is often led to do in expectation of a future dearth."<sup>c</sup>

The advantage which such magazines afforded, of keeping the grain from the knowledge of an enemy, must at all times, in countries so troubled by war, have contributed to the preference which has been given to them. Such subterraneous garner are unquestionably indicated in the passages of the Old Testament cited below;<sup>d</sup> whereas one of the very few allusions in the New Testament undoubtedly refers to a constructed edifice;<sup>e</sup> while in another the "storehouse" (or old subterraneous garner) and the "barn" are mentioned in opposition, so as to show that the latter had not superseded the former, but that *both* were in use.<sup>f</sup>

Now having taken the corn from the harvest field to the garner, we may return to the field to dispose of the stubble which is left on the ground when the harvest has been gathered by the sickle. This, when perfectly dry by exposure to the heat of summer, is very generally set on fire in the ground for the purpose for which the practice is noticed and commended by the Roman writers on agriculture, namely, the ashes affording a useful manure to the ground, while the seeds of weeds are consumed in the fire. Pasture grounds are burnt in the same manner and for the same purpose, that is, for the benefit of the after crop. The sight of a long line of flame, marching slowly over a large tract of open country, lingering here and

<sup>a</sup> *Amurca* was made with the dregs or lees of oil. Varro, lib. i. cap. 44.

<sup>c</sup> Russell, i. 77.

<sup>d</sup> Jer. xii. 8; Amos ix. 6; Joel i. 17.

<sup>e</sup> Luke xii. 18,—“I will pull down my barns, and build greater; and there will I bestow all my fruits and my goods.”

<sup>f</sup> Luke xii. 24,—“Consider the ravens: for they neither sow nor reap; which neither have storehouse nor barn.”

<sup>b</sup> Varro, lib. i. cap. 57, 3.

there, and rising high, where it finds matter on which it can feed well, and leaving the blackness of desolation behind it, is one of the most singular and imposing spectacles which the traveller in the East encounters. These fires, badly managed or incautiously kindled, when the wind blows in the direction of buildings or woods, are often productive of much damage to property, and sometimes with danger to life. This usage may be recognised in the Bible in such passages as those adduced below.<sup>a</sup> It appears, however, that the straw left standing in the corn-fields was often considered too valuable to be burnt. It was then cut down (a work which the Roman writers fix to the time between the dog days and the autumnal equinox);<sup>b</sup> or else, if intended for fodder, the cattle were set to feed upon it in the field, to save the expense of cutting it down.

As to the straw bruised in the threshing, it seems to have been always used for fodder in the East, instead of hay. Columella describes it as being every where used for this purpose where hay was not afforded. And he supplies us the valuable information that the straw of millet was considered the best; after that, the straw of barley; and next, the straw of wheat.<sup>c</sup> For sheep, however, he represents the straw of pulse as the most suitable.<sup>d</sup> Pliny says, generally, that the straw of the kinds of grain which have the smallest stalk are the best for fodder; and that the nearer it is reduced to dust the better; and he agrees with Columella as to the relative values of the straw of millet, barley and *triticum* (wheat), which last, however, he regards as not the worst for labouring cattle.<sup>e</sup>

This may seem a proper place to notice the returns of the harvest in Palestine, as far as information can be obtained.

The land cultivated by Isaac yielded him a hundred-fold;<sup>f</sup> and our Saviour, in one of his parables, states that when good seed was sown upon good ground, it brought forth in some places thirty, in others forty, in others sixty, and in others even a hundred-fold.<sup>g</sup> From this it may be inferred that a crop upon good land was not considered at all extraordinary if it did not produce thirty-fold; for this is the smallest crop mentioned, which probably would not have been the case had a lesser crop from such lands been accounted a good one. Even more extraordinary examples of fertility than this are ascribed by ancient writers to Sicily, Syria, and Africa, and to the banks of the Tigris and Euphrates,<sup>h</sup> which may be either referred to peculiarly productive species of grain, like that of Heshbon, or to the fact that the seeds being put into the soil at a distance from each other, the roots formed from them drew such large nourishment from a good soil as to send forth several stalks, each of them laden with several ears of corn.<sup>i</sup> We all know how the strength and prolificity of various plants is increased by such distant planting as enables the root to derive the largest portion of nourishment from the soil; and there is really scarcely a limit in the East to the powers of production wherever the elements of heat and moisture can unitedly operate upon a good soil. Many shrubs of Europe are large trees in the East, and many plants which are annual in Europe are perennial there. It is, however, to be remembered that in the Scriptural instances, as well as in the others which we have adduced, are given by their authors as extraordinary examples of fertility, and are not therefore to be taken as tests of the ordinary and average scale of production.

After this preface we may adduce the information which can be obtained respecting the present condition of the question. There is little information but that which Burckhardt<sup>k</sup> affords; and this refers chiefly to the excellent corn districts of the Haouran and Djolan, beyond Jordan.

In these districts it is expected, after a favourable season of rain, that the land should yield *twenty-five* times the quantity of the seed sown; and this is reckoned an excellent crop. In another place,<sup>l</sup> however, after stating that the peasants of the Haouran are shy of speaking

<sup>a</sup> "Therefore, as the fire devoureth the stubble, and the flame consumeth the chaff, so their root shall be as rottenness."—Isa. v. 24. "And the house of Jacob shall be as fire, and the house of Joseph a flame, and the house of Esau for stubble; and they shall kindle in them, and devour them, and there shall not be any of the house of Esau remaining."—Obad. 18.

<sup>b</sup> Varro, lib. i. cap. 33.

<sup>c</sup> Colum. lib. vi cap. 3, 3.

<sup>d</sup> Ibid. vii. 3, 22.

<sup>e</sup> Nat. Hist. lib. xviii. cap. 30.

<sup>f</sup> Gen. xxvi. 12.

<sup>g</sup> Matt. xiii. 8.

<sup>h</sup> See Herodotus, i. 193, ii. 102; Strabo, 783; Diodorus, i. 19, 34, 57; Theophrastus (de Hist. Plant.), viii. 7; Pliny, xvii. 5, 17, xviii. 1; Varro, l. 44.

<sup>i</sup> Gen. xli. 5, 47.

<sup>k</sup> Syria, 283.

<sup>l</sup> Ibid. 296.

of their land, from the apprehension that the inquiries of the stranger may lead to new extortions, he declares that he has reason to believe that, *in middling years*, wheat yields twenty-five fold; and adds that in some parts of the Haouran barley yielded fifty-five fold, and even in some instances eighty, as in the year 1812. A Sheikh inhabiting a village on the borders of the Ledja assured him that from twenty mouds of wheat seed he once obtained twenty ghararas, or *one hundred and twenty fold*. Fields watered by rain yield more in proportion to the seed sown than those which are artificially watered; this is owing to the seed being sown thinner in the former,—a confirmation of the suggestion which has already been offered.

Where abundance of water can be conducted into the fields from neighbouring springs, the soil is again sown, after the grain harvest, with vegetables, lentils, pease, sesamum, &c. But the lands which are not capable of artificial irrigation are generally suffered to be fallow one year; a part of them is sometimes sown in spring with sesamum, cucumbers, melons and pulse.

In abundant years, wheat sells at fifty piastres the gharara, or about fifty shillings for fifteen hundred weight; but in 1811, a year of scarcity, the gharara rose as high as one hundred and ninety piastres. The price of barley is about half that of wheat. The wheat of the Haouran is at this day considered equal, if not superior, to any other in Syria.

In those districts the wealth of a man is estimated by the number of the pairs or yokes of cows or oxen which he employs in the cultivation of his fields. If it be asked whether such a one has piastres (a common phrase for expressing wealth) it will probably be answered, "a great deal; he drives six pairs of oxen." There are but few now, however, who have as many as six yokes of oxen. A man with two or three is esteemed wealthy; and such a one has probably two camels, perhaps a mare, or at least a *gedish* (a gelding), or a couple of asses, and forty or fifty sheep or goats. This still subsisting custom of the country serves well to illustrate a mode of estimating property with which the reader of the Bible is familiar.

**ESCULENT VEGETABLES.**—Korte<sup>a</sup> takes notice that the inhabitants of Palestine still continue to sow various garden vegetables, part of which are unknown to us, and many of them, as cucumbers, cauliflowers and others, come to maturity twice in the same year—in spring and autumn. Under April we named the vegetables which come into use that month and the present, and which continue through the summer.

**PLANTS.**—*Sage* and *rue* are displayed abundantly on Mount Carmel, and in other congenial situations.<sup>b</sup>

*Mandrakes*,<sup>c</sup> which are in great plenty in Galilee, this month yield ripe fruit.<sup>d</sup> The name of this plant occurs in our Bibles as a translation of the Hebrew דודאים, *dudaim*, which is found in two places of the Bible, one of which<sup>e</sup> describes the fruit as being ripe at the time of wheat harvest, and apparently, as being provocative of amorous desires; while the other<sup>f</sup> assigns to it a pleasant smell, and names it along with the pomegranate. All these characters apply to the mandrake in Palestine, and we are therefore inclined to agree in the preference of our public version, without concerning ourselves with the numerous alternatives which have been suggested,—the rather as it is our purpose only to deal with plants as actually growing in Palestine. From the manner in which its qualities are alluded to by sacred and other writers, a description of the plant may not be unacceptable.

The mandrake has a long taper root, shaped like a parsnip, and almost of the same colour, but a little darker. This root runs three or four feet deep in the ground. This is sometimes single, but often divided into two or three branches (probably according to the age of the root). Immediately from the crown of this root rises a circle of leaves, as in the lettuce, which indeed they greatly resemble, except in the colour, which is of a darker green. This tuft of leaves is

<sup>a</sup> Reise, 187.

<sup>b</sup> Egmont and Heyman, ii. 11.

<sup>c</sup> *Atropa mandragora*.

<sup>d</sup> Hasselquist, 184; Schulze, P. V. 197. Mariti, ii. 275.

<sup>e</sup> Gen. xxx. 14, 15, 16.

<sup>f</sup> Sol. Song, vii. 13.

at first erect, but when they attain their full growth, they spread open, and lie upon the ground. They are more than a foot in length, and in the middle are four inches broad, growing narrow towards both ends. Among these come out the blossoms, which are of a purple colour in Palestine,<sup>a</sup> but in this country of a greenish white; and this, with other circumstances, would suggest that the plant is somewhat varied by the difference of climate, by which in our own it has been divested of some of the qualities which constituted its claim to be regarded as the Hebrew *dudaim*.<sup>b</sup> The fruit when full grown is not, *in this country*, larger than a nutmeg, of a yellowish-green colour when ripe, and full of pulp. Here the whole plant is fetid, and reputed to be poisonous, although in small doses it has been used medicinally, especially as an opiate. But in Palestine, *the fruit* attains the size, and is of the colour of a small apple, ruddy, and of a most agreeable odour. "Our guide," says Mariti, "thought us fools for suspecting it to be unwholesome. He ate of it freely himself, and it is generally valued by the inhabitants as exhilarating their spirits, and a provocative to venery."<sup>c</sup> When at Nazareth, (May 16th, n. s.) Hasselquist writes, "What I found most remarkable in this village, was the great quantity of mandrakes that grew in a vale below it. I had not the pleasure to see the plant in blossom; the fruit now hanging ripe to the stem, which lay withered on the ground; but I got several roots which I found it difficult to procure entire, as the inhabitants had no spades, but a kind of hoe, or ground-axe; with this they cut up the earth, and hurt the root, which in some plants descended six or eight feet under ground. From the season in which this mandrake blossoms and ripens its fruit, one might form a conjecture that it is Rachel's *dudaim*. These were brought her in the wheat harvest, which in Galilee is in the month of May, about this time, and the mandrake was now in fruit."<sup>d</sup> He says he had not noticed it in Judea; but it was there that Mariti observed it. This account, as far as it goes, agrees with that of the Abbate; but he adds that the Arabs call it by a name which signifies "the Devil's meat,"—perhaps (but he does not say) from the *character* of its stimulating qualities, to which we have already alluded, and for which Maundrell also states that the chief priest of the Samaritans informed him the mandrake was still celebrated.

Notwithstanding some difference, it would appear to be the fruit of this mandrake, or of some very similar plant, which Burckhardt describes as a strange thing. Travelling this month in the neighbourhood of Jebel Heish, he states:—"The Arab who accompanied me presented me with a fruit which grows wild in these parts, but which is unknown in the northern parts of Syria, and even at Damascus. It is of the size of a small egg, of the colour of the tomato or love-apple, of a sweet agreeable taste, and full of juice. It grows upon a shrub (?) about six inches high, which I did not see, but was told that its roots were three or four feet in length, and presented the figure of a man in all its parts. The Arabs call the fruit *jerabouh*."<sup>e</sup>

<sup>a</sup> Mariti.

<sup>b</sup> So Haller, in *Germany*, describes the flowers as having a tinge of violet. But little stress is laid on the colours of flowers which differ much by difference of climate and situation. Even the same plant will often change its colour by a very slight removal, as any reader may have noticed in the case of stocks.

<sup>c</sup> Mariti, ii. 195.

<sup>d</sup> Hasselquist, p. 160.

<sup>e</sup> Syria, 232. Since the root of the mandrake has been so much noticed in the preceding statement, it may be as well to mention that its supposed resemblance to the human figure has suggested a considerable number of superstitious and more of impostures. The roots were not only alleged to resemble the human form (and as such are figured in old herbals), but to be distinguished into the male, with a long beard, and female with a redundant head of hair. Mountebank doctors used to carry about fictitious images, shaped from the roots of briony and other plants, cut into form, or forced to grow through moulds of earthenware, and offered them to notice as mandrake roots. They were fabled to grow under the gallows, where the matter falling from the dead body gave them the human shape. It was alleged that the root uttered terrible shrieks or the most appalling groans when dug up; and it was seriously inculcated that he who would take up a mandrake plant, ought, in common prudence, to tie a dog to it for that purpose, to avoid the fearful doom which would assuredly befall him if the deed were done by his own hand. In such a case the dog dies on the spot, when its struggles have drawn out the root, and the owner may take it with impunity. These curious ideas are not European or of modern date. These, and more of the like sort, are the notions which the orientals give of the mandrake; and, as to their date, it is probable that this plant is intended by Josephus in describing the root *baaras*, of which he tells many wonderful things; among others, the mode of taking it by the help of a dog. Its use was, he says, for the expulsion of evil spirits, who could not endure its smell. To this *baaras* he also ascribes a luminous property, the colour of flame, and flashes like lightning at night. Eugene Roger has a chapter, '*De la prodigieuse plante de Baaras*,' in which he speaks of a plant noticed by him about a league from the cedars of Lebanon, on the road to Damascus. He says they begin to be noticed in the month of May, when the snows have disappeared. Himself, travelling with three Maronites, saw five or six of these plants, which at night shone with a light like that of a candle, but had no luminous appearance by day. Determined to make an experiment, he and his friends took three leaves from three different plants, and wrapped them up in their pocket handkerchiefs: but from the time they

The culture of *cotton* receives considerable attention in Syria and Palestine, if we may judge from the frequent mention of cotton-fields by travellers, who give little other information on the subject. Indeed it is not necessary to enter into particulars concerning the cotton culture of Palestine, seeing that there are other countries in which it is much more abundantly and conspicuously produced.

Both Walch and Buhle experienced a difficulty, not greatly to the credit of their research, in settling the time of sowing cotton in Palestine; and this chiefly because Korte affirms that the plant is sown in autumn, bears the Syrian winter, and in the month of May puts forth a yellow blossom which gives place to a ball resembling a walnut in which the cotton is contained;<sup>a</sup> whereas Pococke, Maundrell, Hasselquist, and others, affirm that the cotton was sown in April or May, and in the latter month notice extensive fields of the young plants. They overlook the testimony of Rauwolff, who noticed cotton-fields in October and November,<sup>b</sup> thus confirming a portion of Korte's testimony; and the other portion is incidentally confirmed by Elliot, who, in the early part of May, at the village of Nain, found a number of persons engaged in clearing cotton from the pods, which *must* have been the product of an autumnal sowing.<sup>c</sup> The explanation of these apparent contradictions is to be found in the fact that *both* are right; and that there is, as in the case of corn, both an autumnal and spring sowing, and a spring and autumnal crop. With due regard to the climate and to the seasons at which the rains commence and terminate, it appears to us that cotton might be sown at any time from August to May, just as the comparison of these statements would seem to require. Nothing can be more different than the periods of sowing in different countries, varying with these circumstances. All the conditions of the question seem to be illustrated by the following statement, which, although having a primary reference to Africa, is obviously of general application:—"In situations where the rains are not violent, the cotton seed is generally put into the ground in the early part of the rainy season. But in places differently circumstanced, the operation is deferred till the rains are within a month or two of their termination, with a view both to guard against an over luxuriant vegetation, whereby the plants might exhaust their strength in branches and leaves, and to avoid the injurious consequences of rain at the times the blossoms are appearing and the pods forming. The best time for planting must be regulated by experience, and by the result of experiments to be made at all seasons; but the earlier the seed can *safely* be sown the better."<sup>d</sup> To which we may add the statement respecting the sowing of cotton in the Isle of Bourbon, which is obviously applicable as a general statement, and to Syria in particular, when allowance has been made for the circumstance that the rainy season begins sooner and ends later in that country:—"As the rains commence in October and November, these months are generally chosen for planting cotton. The plantations, however, can be formed as late as January in all parts of the island, but must not be delayed longer where the violence of the rain ceases in March, because the plants will not have acquired strength sufficient to support the drought at the time they set in. In those districts where rain is more frequent, they may plant at all times; but the seed sown in winter thrives more slowly and languishes till the beginning of the heats and rain. It may also be

were separated from the parent plant they lost their luminous properties. His three friends then enclosed three of the plants with the fillets of their turbans, intending to root them up with proper care in the morning; but to their infinite astonishment, the plants, and even the leaves in the handkerchiefs, had by that time disappeared. The Maronites referred the whole affair to demons and magic; but Roger inclines more to the opinion that the plant in a certain stage of its growth becomes replete with a bituminous humour, which is inflamed by the antiperistasis of the cold night air of the high mountains, and by which the plant itself is consumed. We have great confidence in Roger's honesty; and believe what he tells about the luminous appearance of the plant and its cessation in the departed leaves, but are disposed to think that their disappearance by the morning was the result of some mystification on the part of his Marouite companions, natives of the mountain. Calmet, who has a curious article on the subject, thinks that the luminous appearance of the plant may be accounted for by supposing that glow-worms find something attractive in the plant, and love to be about it. The Arabs call it *Serag-al-cashrob*, or the Devil's Candle.

We have introduced these particulars here without undertaking to say to what extent they are applicable to the mandrake: but it seems to us that the *baras* of Josephus is probably the plant mentioned by Roger under the same name; and that it is a species of the mandrake, if not the *stropa mandragora*.

<sup>a</sup> Roise, 576.

<sup>b</sup> Rauwolff, 160, 166.

<sup>c</sup> Elliot, ii. 360.

<sup>d</sup> 'Directions for the Culture of Cotton in Africa (printed by the African Society after Mr. Hunt's publication of 1808),' given in the 'Report of the proceedings of the East India Company, in regard to the Production of Cotton-Wool,' p. 330. This Report contains a large mass of valuable but undigested information on the subject of which it treats.

sown in dry weather. It remains in the ground, without injury or annoyance from insects, till it begins to vegetate when the rains fall.<sup>a</sup>

The proper Oriental species of cotton, the *gossypium herbaceum*, is that which seems the most generally cultivated in Palestine. It is indeed the *only* species in Strand's botanical catalogue; but from the manner in which the cotton plant is sometimes mentioned, we more than suspect that there is also one of the biennial or perennial species,—most probably the *gossypium arboreum*, which is cultivated (as well as the other) in Arabia and Egypt. In the latter country the *G. arboreum* is cultivated in Upper Egypt, and is there sown at two periods of the year, the first early in April, and the other in July; but the *G. herbaceum*, which is cultivated in the Delta, is only sown in April, just after the corn harvest; the soil is then very dry, but receives strong irrigation both before and after the seed is committed to it.<sup>b</sup> But with reference to a product on which so much depends on rain, little is to be inferred from the times of a country so peculiarly circumstanced in that respect as Egypt.

Monro<sup>c</sup> found the less periwinkle<sup>d</sup> and the Italian squill<sup>e</sup> in flower just below the snows of Lebanon, serving to show that even in that cold region the sun has influence. In the valley of Baalbec, he also took notice of the spiked veronica.<sup>f</sup> Lord Lindsay<sup>g</sup> observes that at this season a flower resembling the hollyhock “adorns every field in Palestine.”

Burckhardt,<sup>h</sup> travelling this month in Sinai, took notice of the pretty red flower of the *noman* plant,<sup>i</sup> which abounds in all the valleys of Sinai, and is also seen among the most barren granite rocks of the mountains. It is indeed in such barren rocky places, and dry sandy soils, that most of these succulent plants delight. We do not know if this of Euphorbia is found in Palestine—probably so, as it certainly has several species of this extensive and singular genus of plants. The known species of Palestine are named below.<sup>k</sup>

Burckhardt, when in one of the valleys of Sinai, notices that many of its herbs were odoriferous “as the *Obeytheran*,<sup>l</sup> the *Sille*,<sup>m</sup> and the *Shyh*, or Artemisia. The Bedouins collect also the herb *Adjrem*, which they dry, break in pieces, and pound between stones, and then use it as a substitute for soap in washing their linen.” We much regret that he does not name, nor can we discover the botanical name of the plant thus indicated, as some purifying or cleansing herb is undoubtedly denoted by the Hebrew word,<sup>n</sup> translated “soap” in Jer. ii. 22, and Mal. iii. 2, and it is therefore desirable that we should be well acquainted with the plants which are applied to such uses at present. This reminds us to mention that after the last rains (in May) the heath is cut at Joppa and burnt, and the ashes used in the manufacture of soap.<sup>o</sup> It is remarkable that the deserts produce in the greatest abundance the sorts of plants, the ashes of which afford the vegetable alkali required for this purpose. At Aleppo the ashes employed in the manufacture of soap are brought from the desert by the Arabs.<sup>p</sup>

The botanical observations of Hasselquist in Palestine were all made in the months of April and May. And it has occurred to us as the best course to follow him throughout, and report in one connected statement such of his remarks as have not been incorporated in the preceding pages of this chapter, or which it may not seem desirable to reserve for future use. We occasionally add, from other sources, such observations as seem required when subjects are mentioned to which we do not propose to give any further attention.

He landed at Jaffa on the first of April. Here he noticed fig-trees, as beautiful as any he had seen in the Levant, likewise several sycamores, which became scarcer as he advanced into

<sup>a</sup> ‘Remarks on the Culture of Cotton in the Island of Bourbon,’ in the East India Company's ‘Report,’ p. 394. See also the instructive Article on Cotton in Mr. Porter's ‘Tropical Agriculturist.’

<sup>b</sup> Girard, ‘Mémoire sur l'Agriculture de l'Egypte,’ in ‘Descript. de l'Egypte,’ tome xvii. p. 104, 106.

<sup>c</sup> Vol. ii. pp. 89 and 102.

<sup>d</sup> *Vinca tinor.*

<sup>e</sup> Vol. ii. p. 85.

<sup>f</sup> *Scilla Italica.*

<sup>f</sup> *Veronica spicata.*

<sup>h</sup> ‘Syria,’ 571.

<sup>i</sup> *Euphorbia retusa* of Forskal.

<sup>k</sup> *Euphorbia viminalis*; *E. chamaesyce*; *E. pepus*; *E. thymifolia*; *E. portlandica*; *E. serrata*. There are probably more for Russell's list for Aleppo contains fourteen species.

<sup>l</sup> *Santolina fragrantissima.*

<sup>m</sup> He says, “Perhaps the *Zilla Myagrum* of Forskal.”

<sup>n</sup> בִּרְית, borith.

<sup>o</sup> Korte, 199.

<sup>p</sup> Russell, t. 79.

the country. In the gardens the terebinth tree, the orange and the peach tree also attracted his notice. In the gardens a small quantity of hemp<sup>a</sup> was also cultivated. The Moslems reduce the leaves to powder, and make with it a narcotic confection which has the same effect upon them as opium. For the same purpose the leaf is also smoked by itself or with tobacco.<sup>b</sup> The other plants which he noticed in that vicinity are, golden henbane;<sup>c</sup> pellitory;<sup>d</sup> boxthorn;<sup>e</sup> with which the Latin monks believe the thorny crown of Christ to have been made; a species of spurge<sup>f</sup> in the hedges; poppy;<sup>g</sup> and mallow.<sup>h</sup>

Between Jaffa and Rama entire plains were covered with ox-eye,<sup>i</sup> with oblong dentated leaves; which made them much yellower than the plains of Sweden are in May from marsh-marigold and crowsfoot (or *caltha palustris* and *ranunculus*). In other places the fields were white with a sort of matricaria, or feverfew. The thistle<sup>k</sup> and tower mustard were also noticed.

At Jerusalem the following plants were noticed by him in April:—fescue grass,<sup>l</sup> growing in the dry grounds around the town, and seeming very grateful to the sheep and goats; water-cresses; two species of geranium;<sup>m</sup> hound's tongue; great goose grass; archangel;<sup>n</sup> and the Roman nettle.<sup>o</sup>

On Mount Sion, *ranunculus*; betony; horehound; pale-flowered garlic;<sup>p</sup> buckler mustard; trefoil;<sup>q</sup> but as this grows very small, Hasselquist says we may safely conclude the soil barren; treacle mustard; whitlow grass; camomile; hawk's-weed; ox-eye; and shrubby horsetail,<sup>r</sup> which we should hardly expect to find in so dry a situation.

On the 11th of April our botanist went to Jericho. Near Jerusalem he found the carob tree, the myrtle, and the terebinth tree growing on the hills; but further on the hills became bare. The valleys, like the hills, are deserted and uncultivated, but contain a good red mould which would well repay the care of the husbandman. On the way, he botanised on the Mount Quarantania—the Mount of Temptation—and found:—the mountain onion;<sup>s</sup> the castor-oil tree;<sup>t</sup> buckthorn;<sup>u</sup> chaste-tree; wild olive; the fig-tree; spurge; *ranunculus*; mallow;<sup>v</sup> ox-eye;<sup>w</sup> goose-foot;<sup>x</sup> porcupine.<sup>y</sup>

Among the plants just named there are only two on which we shall detain the reader. The further mention of the *mallow* reminds us that this plant is once named in our translation of the Bible. In Job xxx. 4, the poor, in times of scarcity, are described as cutting up “mallows” for their food. It is much doubted that any species of mallow is really intended; but it is nevertheless true that mallows are used for food by poor people in Palestine. “Master William Biddulph,” travelling from Aleppo to Jerusalem (in March, 1600), halted at a village called Lacmine, and “after the showre, while our horses were preparing, we walked into the fields neere unto the church, and saw many poore people gathering mallows and three-leafed grasse, and asked them what they did with it; and they answered that it was all their food, and that they boyled it, and did eat it. Then we took pitie on them, and gave them bread, which they received very joyfully, and blessed God that there was bread in the world, and said they had not seen breed the space of many moneths.”<sup>aa</sup>

The other is the goose-foot, or *chenopodium*, of which several species were observed by Hasselquist himself, and others, in Palestine. First there is the green goose-foot,<sup>bb</sup> which is probably no more than a variety of the common or white goose-foot, so abundant in England. Then there is the species called “the oak of Jerusalem,” valued for the ambrosial scent of the leaves when bruised, although the flowers have no beauty. Palestine also possesses the very beautiful flax-

<sup>a</sup> *Cannabis vulgaris*.

<sup>d</sup> *Parietaria officin.*

<sup>f</sup> Not named, described—“*Euphorbia foliis oblongis lanceolatis verticillatis, herbarca, inermis, pedalis.*”

<sup>g</sup> *Papaver rhoeas*.

<sup>k</sup> *Cnicus tomentosus*,

<sup>m</sup> *Geranium rotundifolium*; *G. columbinum*.

<sup>p</sup> *Allium pallens*.

<sup>v</sup> See the account of this mountain at p. xl.

<sup>y</sup> *Rhamnus spina Christi*.

<sup>y</sup> *Chenopodium rudenum*.

<sup>aa</sup> Letter of Master William Biddulph from Jerusalem, in Purchas, p. 1344.

<sup>b</sup> Burckhardt, 603.

<sup>c</sup> *Lycium spinosum*.

<sup>e</sup> “*Buphthalmum foliis oblongis dentatis.*”

<sup>h</sup> *Malva vulgaris*.

<sup>l</sup> *Festuca fusca*? Two other species were noticed by him in Palestine—*F. myuros* and *F. reptans*.

<sup>n</sup> *Lamium album*.

<sup>o</sup> *Trifolium globosum*; *T. tomentosum*; *T. resupinatum*.

<sup>r</sup> *Cepa montana*.

<sup>w</sup> *Ma'va rudenum*.

<sup>x</sup> *Hlystris cristata*.

<sup>o</sup> *Hyoscyamus aureus*.

<sup>i</sup> “*Buphthalmum foliis oblongis dentatis.*”

<sup>s</sup> *Urtica pilulifera*.

<sup>t</sup> *Ephedra distachia*.

<sup>u</sup> *Ricinus palma Christi*.

<sup>x</sup> *Buphthalmum commune*.

<sup>bb</sup> *Chenopodium viride*.

leaved goose-foot,<sup>a</sup> otherwise belvidere, or summer cypress, so called from the resemblance of its figure to that of the cypress-tree, although its leaves are of a bright green. There is also the sea goose-foot,<sup>b</sup> which, notwithstanding its name, grows also abundantly on the banks of the larger rivers of Western Asia. It varies in appearance with its situation. On the banks of the Tigris and Euphrates it is an erect and woody shrub, while in many places it is a small and decumbent plant, esteemed as an excellent pot-herb. It is also abundant on the borders of the Red Sea; and although found beside rivers, its favourite situation is certainly on the sea-shore or on the borders of salt marshes. The other Palestine species is the *chenopodium fruticosum*.



[Sea Goose-foot. *Chenopodium Maritimum*.]

The most remarkable plants which Hasselquist found in the neighbourhood of Jericho were “the famous *asclepias gigantea* (gigantic swallow-wort) of Judea, and a tree whose flowers resemble a honeysuckle, and that has thick leaves.”

On the banks of the Jordan he noticed *rhamnus* (*spina Christi* ?), the chaste-tree, and willows, of which the pilgrims cut staves.

Returning from the head of the Dead Sea to the encampment near Jericho, our botanist notes:—“A lichen covered in several places the clay ground in this large plain, which was somewhat strange in an open desert. There grew in several places of this desert the tamarisk-tree; *Remauria*; a kind of the Arabian kali;<sup>c</sup> and a labiated flower of Linnæus, class didynamia, which had a fetid smell, and is called by the Arabs *basel*, which signifies a leek.<sup>d</sup> I found but one shrub of the *mimosa nilotica*, or true acacia.”<sup>e</sup> In a separate list he adds a species of nightshade<sup>f</sup> and of heath<sup>g</sup> to those which have been named.



[Arabian Jasmine. *Jasminum Sambac*.]

When he returned to Jerusalem he found occasion to notice in the court of a mosque the Florence iris,<sup>h</sup> the common yellow jasmine, the almond-tree, and the elm-leaved sumach.<sup>i</sup> In the court of the church of St. Mary’s Sepulchre he noticed a bird cherry, or cherry-laurel tree,<sup>k</sup> three fathoms round. Besides the species of jasmine just named,<sup>l</sup> Palestine also possesses the Arabian<sup>m</sup> and Spanish<sup>n</sup> jasmines. The very beautiful Arabian species, which, wherever it will grow, is so much esteemed for its highly odoriferous flowers, which it continues to produce during the greater part of the year, is an object of culture in Arabia, Egypt, and Palestine, as well as in more eastern countries. With this, and with the species indicated by Hasselquist, as well as with the vine, the townspeople of Palestine delight the alleys and arbours in their gardens;<sup>o</sup> and there are few products of nature more suitable or pleasant for this use. We

<sup>a</sup> *Chenopodium scoparia*.

<sup>b</sup> *Chenopodium maritimum*.

<sup>c</sup> *Kali fruticosum* (*Salsola fruticosa* ?) glasswort.

<sup>d</sup> We cannot say what plant he means; but the name is that which the Arabs give to the common onion, *allium cepa*.

<sup>e</sup> *Acacia vera*.

<sup>f</sup> *Solanum fruticosum quadripedale canis et foliis spinosis*.

<sup>g</sup> *Erica simplex fruticosa*.

<sup>h</sup> *Iris florentina*.

<sup>i</sup> *Rhus coriaria*.

<sup>k</sup> *Prunus padus*.

<sup>l</sup> *Jasminum fruticosum*.

<sup>m</sup> *J. sambac*.

<sup>n</sup> *J. grandiflorum*.

<sup>o</sup> D’Arvieux, ii. 58.



more than expected to find in Palestine the common white jasmine,<sup>a</sup> which Parkinson supposes to have been originally brought from Syria into Spain, whence we obtained it; but not finding it named by any of our authorities, we dare not set it down. The straight branches of the jasmine and the cherry tree are much preferred by the Western Asiatics for the long stems of their tobacco pipes.

Hasselquist took a journey to Bethlehem on the 19th April, and returned the next day. Near the "fountains of Solomon" on that road, he found maiden-hair;<sup>b</sup> and water-cresses;<sup>c</sup> stinking-bean trefoil, upon the neighbouring hills; wild marjoram, and the common sweet basil.

Afterwards our botanist went from Jerusalem to Jaffa, and then to Acre, whence he made an excursion into Galilee and the Lake of Tiberias, which, with his return and further journey to Sidon, occupied him one month, from the 21st April to 21st May. At Rama, and in the way between it and Jerusalem, he noticed terebinth-trees, the chaste-tree; the tamarisk; the carob-tree; one sycamore at Rama; artichoke;<sup>d</sup> hemlock;<sup>e</sup> and six species of thistles.<sup>f</sup>

At Acre he noticed the viscous campion, the plantain,<sup>g</sup> liou's-tail grass, winter-cherry,<sup>h</sup> and lavender cotton-leaved milfoil.<sup>i</sup>

Leaving Acre on May 2nd for Nazareth, he passed by fields of newly sown cotton, and saw the peasantry busied in the barley harvest. In the plain of Zebulon he saw some beech-trees<sup>k</sup> in a grove composed chiefly of oaks.

Mount Tabor offered a rich harvest of botanical observations, the results of which are offered in the following list:—hound's-tongue;<sup>l</sup> stinking rest-harrow;<sup>m</sup> poppy, two species;<sup>n</sup> ox-eye;<sup>o</sup> artichoke; rue; laser-wort;<sup>p</sup> burnt saxifrage;<sup>q</sup> trefoil;<sup>r</sup> oak;<sup>s</sup> carob-tree; various species of sage;<sup>t</sup> wormwood;<sup>u</sup> holly, in the valleys; terebinth, on the rocks; myrtle; viper-grass;<sup>v</sup> succory;<sup>w</sup> ivy; mountain-onion; and oats (wild).

After returning to Acre (on May 14th) and staying there several days, Hasselquist proceeded to Sidon, along the shore. For the first two leagues, a fine country producing the common plants and the Egyptian willow,<sup>x</sup> which he had not before seen in Palestine, that which grows beside the Jordan being the common weeping willow;<sup>y</sup> there were also incredible quantities of wormwood. Further on, beyond the White Cape, the botanist rested under "a green bay tree,"<sup>z</sup> of which tree he had not met with any specimens in Judea or Galilee. *A. rubus* (bramble) which he had not seen before, grew among the ruins of Scanderetta. About the so-called Pools of Solomon, near Tyre,<sup>aa</sup> our traveller notes the names of several plants, but none which he had not seen elsewhere, except a species of convolvulus;<sup>bb</sup> another of nightshade; and the annual mercury.<sup>cc</sup> At Sidon, he writes:—"Cordia sebesten, which is a rare tree in Egypt,

<sup>a</sup> *Jasminum officin.*

<sup>d</sup> *Cynara cardunculus.*

<sup>g</sup> He does not name the species. There are three in Palestine,—*Plantago major*; *P. lagopus*; and *P. cynops*, of which the last is found in the neighbourhood of Jerusalem.

<sup>h</sup> *Physalis alkekengi.*

<sup>i</sup> *Achillea santolina.*

<sup>k</sup> *Fagus sylvatica.*

<sup>l</sup> *Cynoglossum hispidum.* <sup>m</sup> *Ononis fistida.* <sup>n</sup> *Papaver rhæus*; and another described as *P. flore flavescens parvo.*

<sup>o</sup> *Euphthalmum dentatum.*

<sup>p</sup> *Laserpitium latifolium.*

<sup>q</sup> *Pimpinella officin.*

<sup>r</sup> He does not name the species. It may be well to enumerate those which grow in Palestine:—*Trefolium Alexandricum*; *T. stellatum*; *T. angustifolium*; *T. incarnatum*; *T. globosum*; *T. procumbens*; *T. tomentosum*; *T. resuspinatum*. All these are on the authority of Poccocke and Hasselquist.

<sup>s</sup> *Quercus foliis dentato-aculeatis.*

<sup>t</sup> Palestine affords the following species of *Salvia*:—*S. pomifera*; *S. Syriaea*; *S. noronensis*; *S. verticillatum*; *S. verbenaca*; and two others not named.

<sup>u</sup> *Abiesinthium romanum.*

<sup>v</sup> *Scorsonera.*

<sup>w</sup> *Cichorium intybus.*

<sup>x</sup> *Saisis Egyptica* vel *S. saftaf.*

<sup>y</sup> *Saisis Babylonica.*

<sup>z</sup> Psalm xxxvii. 25, 26.

<sup>aa</sup> Noticed before at p. cxcix.

<sup>bb</sup> The species of convolvulus are numerous in Palestine:—*C. scammona*, or Syrian bindweed, or scammony. The species noticed here by Hasselquist is, doubtless, the same to which he refers in the following passage of his 'Materia Medica':—"The best scammony in the world is brought from Marasch, the residence of a pasha, about four days' journey from Aleppo, near the confines of Armenia. It is thence brought to Aleppo in small skins, and by the merchants sent to London and Marseilles. It was formerly to be had very good from Mount Carmel, near Acre; but at present scarcely any comes from that place, as the Arabian inhabitants of the mountain have neglected to gather it. I have seen the convolvulus from which it is taken grow wild in the vales between Nazareth and Mount Carmel." Martinelli, an apothecary of Venice, travelled into Syria for the purpose of procuring the true scammony, and sent over a quantity of the seed, which was sown and thrrove well at Padua and Antwerp. *C. batatus*, not only the roots of which, but the young and tender shoots, are boiled and eaten; *C. aederaceus*; *C. cneorum*; *C. darycnium*; *C. althamoides*; *C. siculum*; *C. cairicum*.

<sup>cc</sup> *Mercourialis annua.*

and is not seen in Natolia, grows wild in Palestine. It is so common in the gardens of Seide that the bird-lime which is made of its fruit, is one of the principal articles of trade in the town. *Rhus sumach*, and a three-leaved bramble (*rubus*) grow spontaneously here. Some authors reckon the tamarind among the trees of Seide; but I know not what tree they mistook for it, as it grows not near this place, and not wild even in Egypt."

Having thus followed Hasselquist through Palestine, and carefully noted down the plants of which he speaks,<sup>a</sup> we must now guard the reader from entertaining the notion that he is now acquainted with the amount of this traveller's services in illustrating the botany of Palestine. This is very far from being the case; for Hasselquist collected a vast number of plants, of which he takes no notice in his letters and journals; and these being, on their arrival in Sweden, duly classed and named by his illustrious master (Linnæus), renders him the principal contributor to the '*Flora Palæstina*,' in which they appear with his initial. In fact, this catalogue is almost entirely formed from the materials collected by Rauwolff, Pococke, and Hasselquist, the value of whose contributions may be estimated in the reverse order to that in which their names are given.

### JUNE.

WEATHER.—In his valuable chapter 'Of the Seasons,' Dr. Russell has a statement respecting the three summer months of June, July, and August, which we must introduce in this place.

"The transition to the summer, though it may be marked in its gradations, is still abrupt. Some showers commonly fall in the first fortnight of June; but from that time to the middle of September, it is extraordinary to see any rain. The sky, of a fine pale blue, is constantly serene, a few white fleecy clouds excepted, which sometimes appear about noon, and transiently intercept the sun's rays. The heat increasing gradually in June, continues nearly at the same degree throughout July and part of August, and would be much more harassing were it not mitigated by the westerly breezes, which, in the day time, may be constantly expected. When the breezes fail, the weather becomes extremely hot, but by no means so oppressive as when the wind blows from the north, the north-west, the east, the north-east or south-east.

"From the points now mentioned light airs are not uncommon in the summer, rendering the weather more disagreeably sultry than when an absolute calm prevails; but, when keeping in the same quarters, they rise into brisk gales, especially from the east or south-east, they are then felt dry and ardent, like air issuing from an oven; they parch the eyes, the lips, and nostrils, and produce a lassitude, joined with a certain ineffable oppression at the breast, to which the natives are not less sensible than the Europeans. Within doors, the locks, with the metal utensils of all kinds, become nearly as hot as if exposed to the direct rays of the sun." He proceeds to observe that these remarkable hot winds do not visit Aleppo every year; many summers are altogether without them, and more than five or six such days are never observed in the same season. It is usual, while they last, to shut the doors and windows, to exclude as much as possible of their influence: for although they are not attended by such fatal effects as the desert-wind called samiel, they are extremely oppressive. The samiel itself, we are informed, never reaches to Aleppo, nor is very common in the desert between that city and Bussorah. With respect to these winds, we may refer the reader to what has already been stated at p. cxliii, and need not here enlarge on the subject.

From all that we can collect from the information offered by actual travellers in Palestine, this view of the summer months applies with sufficient exactness to that part of Syria. The chief differences seem to be that rain is even more rare than at Aleppo, that the sky is even more permanently clear, that the heat in parts of the land is rather greater, and that the hot winds are experienced more frequently and in greater force.

<sup>a</sup> We have in many instances sought to discover the specific name assigned by Linnæus to plants not named, and only slightly indicated by Hasselquist. We have often (though less often than we could wish) succeeded in this troublesome task.

Of the month of June, in particular, Dr. Russell reports,—that the morning station of the mercury is 76° or 80°, as in the preceding month; the difference of afternoon height varies from 8° to 12°. The reports of travellers in Palestine show this statement to be so applicable to that country, that little addition to it appears necessary, unless that rain is even more rare in Palestine, and the extreme heat some degrees greater in the warmer parts, particularly in the great valley of the Jordan and its lakes, where it is so great as might enable the inhabitants to grow almost any tropical product. The following are the only further observations which we think it worth while to introduce. The extreme heat by day is attested by various travellers.<sup>a</sup> It is warm even upon the secondary mountains; and the nights are no longer chill: even the silk-worms, which cannot endure cold, now remain all night upon the trees;<sup>b</sup> and travellers sleep in the open air without the least inconvenience. Burckhardt, whose company is always valuable, was travelling this month in the Sinai peninsula; and although therefore his observations are not strictly applicable to Palestine, the proximate information which they afford is too good to be overlooked. We find him on the very first day of the month complaining, “The heat was so oppressive during the whole day, that I felt it even on the summit of the mountains: the air was motionless, and a thin mist pervaded the whole atmosphere, *as always occurs in these climates when the air is much heated.*”<sup>c</sup> On the 2nd a slight shower, instead of cooling the air, made it more oppressive.<sup>d</sup> The simoom occurs with more intense power than the last month both in Palestine and Sinai. In the latter Burckhardt notes (on the 4th):—“This *evening and night* we had a violent simoom. The air was so hot, that when I found the current, the sensation was like that of sitting close to a large fire. The hot wind was accompanied at intervals with gusts of cooler air; and I did not find my respiration impeded for a moment during the continuance of the hot blast.”<sup>e</sup> This last mitigation was probably owing to his being then on the sea-shore. On the 5th, Burckhardt found the thermometer at 107°, under the shade of a rock in the lower regions of the Sinai peninsula.

As a rule, with the rarest possible exceptions, it may be said that rain has entirely ceased to fall in Palestine, and that no more falls until autumn; although it must have been a season of extraordinary autumnal drought which enabled Incherius,<sup>f</sup> who left Venice on the 10th of June, and travelled in Palestine to the latter end of November, to state that in all that time it never rained.

The snows remain perpetually on the higher summits of Lebanon; but they have not yet disappeared up to the limit of perpetual congelation.<sup>g</sup> From this cause, or rather from the elevation, the cold is still sharper on the higher Lebanon. D’Arvieux, who visited Lebanon in this month, was counselled, when he left Tripoli, to take with him his winter robes of fur; and by the time he reached the cedars, he found cause to felicitate himself on having received and followed this advice, the air being very keen in the plains enclosed by the snow-topped mountains.<sup>h</sup> The same traveller informs us that in those higher regions the night air is so severely cold as to render sleeping under a tent impracticable, much more in the open air.<sup>i</sup> He also states that when standing on the mountain-tops, he found the sky quite clear above him; but below there were heavy clouds rolling down into the valleys, where they caused rains.<sup>k</sup>

**TREES AND SHRUBS.**—Pococke<sup>l</sup> ate new *olives* on the 24th, being the only traveller by whom the fruit is mentioned so early in the year. Prince Radzivil found many *rosemary* bushes growing together in Galilee.<sup>m</sup> *Almonds* ripen in June. Troilo,<sup>n</sup> about the middle of this month, describes himself as subsisting almost entirely on figs, almonds, and the fruit of the Lebanon cedar. When Pococke was at Sidon (on the 9th) early apples were shaken ripe from the tree; and a few days later (14th) he found apples, together with apricots, and white and red mulberries at Baalbec.<sup>o</sup> The apples throughout Syria are poor and small, with an

<sup>a</sup> Radzivil, 26, 27. Pococke, ii. 144. La Roque, ii. 8.

<sup>d</sup> Id. 611.

<sup>f</sup> Pococke, i. 153. June 23 n. s.; Radzivil, 27; Beauveau, 162, &c.

<sup>l</sup> ‘Memoires,’ ii. 407.

<sup>m</sup> ‘Travels,’ ii. 152. 165.

<sup>c</sup> ‘Syria,’ 625; see also Thevenot, ii. 89.

<sup>k</sup> Id. 408.

<sup>n</sup> Page 66.

<sup>b</sup> Cotovic, 308.

<sup>e</sup> ‘Syria,’ 609.

<sup>g</sup> Reiss, part i. p. 1.

<sup>h</sup> ‘Memoires,’ ii. 432.

<sup>i</sup> Peregrin. 41.

<sup>o</sup> ‘Travels,’ ii. 152. 165.

insipid sweetness. And it has been within some extensive observation of our own that good apples are never to be found in countries warm enough or too warm to produce the grape in perfection. Hasselquist, speaking of dates, and of the value set upon them in Europe as a foreign luxury, says, "I confess they are good to taste once or twice; but though I have got over the age when such things please most, yet I would gladly give two bushels of dates for half a bushel of good Swedish apples, and am persuaded that I could find thousands in Egypt ready to make the same exchange." Comparing the fruits as luxuries, the present writer, with equally ample opportunities of acquaintance with the date, has been disposed to echo this sentiment. But it is as a substantial *article of food*, to the people in whose countries it grows, that the date obtains a relative value which the apple cannot acquire. Hasselquist further observes that apples are very scarce in Egypt, and that the only good ones are brought from Sinai, where the Greek monks have delightful orchards, full of the finest apple and pear-trees.<sup>a</sup> This is confirmed by Burckhardt and others. The superiority of the apples of Sinai is owing to the comparative coolness of that mountainous district; and, for the like reason, the apples of Lebanon are the best that can be obtained in Palestine.

The famous balm-trees of Jericho began in this month to yield "their medicinal gum," and continued to afford it in July and August. This was perhaps the most renowned and peculiar of all the vegetable productions of Palestine. By Josephus, it is first mentioned in connection with the visit of the queen of Sheba to Solomon; for in mentioning the presents brought by her to that splendid monarch, he says that popular tradition ascribed to her gift the root of that precious balsam which the country still enjoyed.<sup>b</sup>

And on occasion of Pompey's encamping for one night in the plain of Jericho, the historian takes occasion to describe it as the most fruitful country of Judea, "which bears a vast number of palm-trees, and also the balsam-tree, whose sprouts they cut with sharp stones, and at the incisions they gather the juice, which drops down like tears."<sup>c</sup>

This district was (probably on account of its fertility, if not for the sake of these very trees) given by Mark Antony to Cleopatra, and afterwards farmed for her by Herod; in relating which the historian remarks "that the balsam-tree was the most precious thing there, and that it grew nowhere else."<sup>d</sup>

By this he must mean that it grew nowhere else in Syria; for his own account derives it from the country of the queen of Sheba. Indeed the mere fact that it would only grow in the almost tropical climate of Jericho, evinces that it was the native of a warmer climate than that of Syria. And if, as is not unlikely, its product was the same as the "balm," which Jacob sent by the hands of his sons to the governor of Egypt,<sup>e</sup> it must have been introduced into Palestine at a very early date indeed. At a much later period the sacred books name the balm as a precious object in the traffic of the Israelites.<sup>f</sup> In fact, the numerous valuable properties which the ancients ascribed to balsamic substances ultimately caused a very high value to be assigned to this, which was accounted the most perfect of them all. Unacquainted with the fact that it was the native product of a more southern clime, and regardless of the inferences which were opened by the fact that the very warm plain of Jericho was the only part of the country in which it would grow, the ancients rested in the conclusion that Judea was the native seat of this precious tree, and refer to it as one of the peculiar wonders of that land. It appears that in the plain of Jericho the balsam-trees were confined to two enclosed plantations or gardens of no great extent, and one of them much smaller than the other. The produce was but scanty. Pliny<sup>g</sup> states that during Alexander's wars in Palestine, the quantity of balm that could be collected in a summer's day was not more than could be contained in a (oyster) shell; and even in his own time, the annual produce from both plantations did not in the most favourable years exceed about six gallons.<sup>h</sup> It was then sold at the rate of twice its weight in silver; but in the time of Theophrastus, although the

<sup>a</sup> 'Letters,' p. 424.

<sup>b</sup> 'Antiq. xv. 4. 2.

<sup>c</sup> De Bello, i. 7. 6.

<sup>d</sup> 'Antiq. xv. 4. 2.

<sup>e</sup> Gen. xliii. 11.

<sup>f</sup> Ezek. xxvii. 17; Jer. xlv. 11.

<sup>g</sup> 'Nat. Hist.' xii. 25, apparently copying from Theophrastus, ix. 6.

<sup>h</sup> "Omni verò fecunditate à majore horto congios senos, minore singulos." Dioscorides has the same statement. The *congios* is reckoned at rather more than seven English pints.

quantity produced was then less, it sold weight for weight with that metal. The reputation of the balsam-trees had been so great, that they engaged much of the notice of the Romans when they became lords of the country, the peculiar and distinguished product of which was so much considered, that young trees were carried to Rome to adorn the triumph of Vespasian and Titus for their victories over the Jews. They were thus made symbolical of the subjection and bondage to which the country in which they grew and the people to whom they belonged were reduced. One of the first acts of the Romans had been to exact as tribute a certain quantity of the balm. In the last war, the Jews attempted to destroy the trees in which the Romans took so much interest; and the latter were obliged to protect them by force of arms. After the destruction of Jerusalem, the balsam-trees were annexed to the domain of the state, and much attention was paid to their culture and propagation, so that their number was greatly increased. The climate of Egypt was deemed the most suitable for them; and they were introduced into that country, and cultivated chiefly in the neighbourhood of the Egyptian Babylon. Strabo describes it as growing on the Lake Tiberias; and in the time of Galen the balsam-tree was cultivated in some other parts of Palestine besides Jericho,—doubtless in some other parts of the great valley of the Jordan; but it has now long been lost to that country, as well as to Egypt; although its existence on the banks of the Nile can be traced to a comparatively recent date. The Abbate Mariti indeed describes the balsam-tree as if he had actually seen it in Jericho; but the critical reader may find ground to suspect that his account is made up from the descriptions given by Pliny and others. Burckhardt *was told* that the tree which produced the balm of Mecca still grew on the borders of Lake Tiberias; but the hearsay description which he gives differs much from *all* accounts of the true balsam-tree.

The balsam-tree was not forgotten by the old Jewish casuists in their decisions: but their counsels with reference to it were much divided. One party alleged that the collection of the balm ought to be suspended in the seventh or sabbatic year; but this was opposed by others on the ground that the produce of the tree was not a fruit, and the law spoke only of the fruits of the earth as being subject to the regulations of the sabbatic year.<sup>a</sup>

Statements with respect to this tree might be cited largely from ancient writers. Pliny has embodied in one long chapter (but with his usual lack of discrimination) all that was known or said on the subject before his own time. His account is curious, and some particulars have been adduced in the preceding statement; but it does not appear that he or any other old writer on the subject had ever seen the tree itself; and while this explains the contradictions between their accounts, it suggests that the better course is to notice it as now actually existing in Arabia.

That the tree was a native of that quarter may seem to be intimated in the fact that “balm” was one of the commodities which the Arabian merchants were conveying into Egypt in the time of Jacob.<sup>b</sup> But Strabo seems to be the only old writer to whom this was known. “Near to this,” he writes, “is the most happy land of the Sabæans; and they are a very great people. Among them, frankincense, myrrh, and cinnamon grow; and on the coast that is about Saba the balsam also.” Bruce identifies this Saba with that part of Abyssinia, on the coast, near the Straits of Babelmandel, which now bears the name of Azab, in which it is possible that the opposite coast of Arabia also partook. It is curious that the Jewish tradition mentioned by Josephus ascribes the same origin to the tree. And at the present day among the myrrh-trees behind Azab, all along the coast to Babelmandel, is the native country of the tree which produces what is now called the Balm of Mecca, the only existing product which can be identified with the balm of Jericho. “We need not doubt,” says Bruce,<sup>c</sup> “that it was early transplanted into Arabia, that is, into the south part of Arabia-Felix, immediately fronting Azab, the high country of Arabia being too cold for it, being all mountainous, and water freezing there. The first plantation that succeeded seems to have been at Petra, the ancient metropolis of Arabia, now called Beder or Beder Hunein. Afterwards, being transplanted into Palestine, it acquired

<sup>a</sup> Mishna, tit. Sheviih, sive de Jure anni sept. c. vii. sect. 6.

<sup>b</sup> Gen. xxxvii. 25.

<sup>c</sup> In an Appendix on the Balsam, accompanied by figures, at the end of his ‘Travels.’

the name of *balsamum judaicum*, and 'balm of Gilead,' and became an article of commerce there." In Azab it grows to the height of fourteen feet, spontaneously, and without culture, like the myrrh, the coffee, and the frankincense-tree. The are all equally the wood of the country, and are occasionally cut down and used for fuel. The engraving in Bruce is made from a specimen which was five feet two inches high from where the red root begins, or which was buried in the earth, to where it first divides into branches. The trunk at thickest was about five inches in diameter, the wood light and open, and incapable of being polished, covered with a smooth bark of bluish white, like a standard cherry-tree in good health, which has not above half that diameter. It flattens at top, like trees that are exposed to snow, blasts, or sea air, which gives it a stunted appearance. The leaves are rather scanty. The flowers are like those of the acacia-tree, white and round, only that three hang upon three filaments or stalks, where the acacia has but one. Two or three flowers fall and leave a single fruit. The branches that bear this are the shoots of the present year. These are now as formerly cut off and packed in bundles. And the essential matter they contain renders them an inferior substitute for the proper balm. This was the *xylobalsamum*, or balsam wood<sup>a</sup> of the ancients, and still employed for the same purposes for which it was used by the ancient apothecaries.

Beder Hunein, whence Bruce got his specimen, is a village between Mecca and Medina, in a sandy, rocky soil, where the trees are confined to a tract about a mile in length. In the beginning of April the trees drop their juice from gashes which are made in the smaller branches, into vessels set under them to receive it. A gash does not yield above three or four drops in a day, weighing about a drachm, nor will even the best trees yield more, upon the whole, in a season than from twelve to fifteen drachms. It is, for the most part, adulterated on the spot, so as to render it a matter of great difficulty to procure it in a pure state. An inferior sort is made by boiling the young twigs and leaves over a gentle fire. The balsamic matter rises to the surface and is skimmed off. After they have thus procured all they can, it is said that the fire is increased, when a thicker balsam, like turpentine, rises, which is preserved by itself, and is that principally which finds its way into Europe. The other can only be obtained by presents; and as for that which distils naturally from the trees, it barely suffices for the use of the court at Constantinople, to which it is or was all sent.

Hasselquist describes the true balsam of Mecca as being yellow and pellucid, with a most fragrant, resinous, and balsamic smell. It is very tenacious, or glutinous, sticking to the fingers, and may be drawn out in very long threads. He saw it at a Turkish surgeon's, who had it immediately from Mecca, and who informed him that it is the best stomachic they know, taken in the quantity of about three grains; and that it is a most excellent remedy for wounds, a few drops of it applied to a fresh wound, heals it in a very short time. Its purity is tested by letting a drop fall into a glass of clear spring water; if this drop remains in one place on the surface of the water, it is of little value; but if it spreads over the whole surface in a thin pellicle, which, with a hair, thread, or silk, may be taken off the water, which remains as clear as at first, then it is known to be of the best kind, and not adulterated. But the Turks confess it is rare to find any that will abide this test.

We should mention that the tree in question is the *Amyris opobalsamum* of Linnæus.

Our attention is next drawn to the *tamarisk*, with which some interesting inquiries are connected, to which there has been some reference in the historical portion of the present work.<sup>b</sup> These, as the reader knows, arise from the attempt to find in the product of a species of tamarisk, growing in the Sinai peninsula, the manna with which the Israelites were fed in that wilderness. In bringing this tree under the notice of our readers, we avail ourselves of the account which Lieut. Wellsted has rendered.<sup>c</sup>

"At a distance of fifteen miles from, and at an elevation of about two thousand feet above the level of the sea, I first saw the tree which produces the manna. This remarkable

<sup>a</sup> Pliuy, xii. 25.

<sup>b</sup> See the History, pp. 211—213.

<sup>c</sup> Travels in Arabia; by Lieut. J. R. Wellsted, I.N., 1838.

[Tamarisk. *Tamarix Gallica*.]

substance is secreted by several trees, and in various countries in the East. In some parts of Persia it is believed to be an insect secretion, and is collected from a shrub called *gavan*, about two feet high, bearing a striking resemblance to the broom. In the hilly district of Looristan, as in Mesopotamia, we find it on several trees of the oak species, which there, however, are of more stunted growth than those of England. From these the manna is collected on cloths spread beneath them at night, and it then bears the form of large crystal drops of dew, such as we see on plants in England in the early part of morning. Burckhardt observes, that at Erzroum a substance resembling manna in taste and consistence distils from the tree which bears galls, and with which the inhabitants of the country forms one of the principal articles of their food. These would appear to be different from the Sicilian manna used for medicinal purposes, and which botanists have considered as a vegetable gum, procured in Calabria and Sicily, and to be exuded from the *Fraxinus ornus*, or flowering ash. A supposition has, however, been started, that this might be also the production of the *aphes* tribe.

“ In the Red Sea, on my route to England, I met with a learned Jewish Rabbi, who had traversed much of the East, and whose Travels had been recently published in India. From him I learned that on his journey through the Desert contiguous to Damascus, far removed from trees or vegetation of any kind, a substance was deposited, which from his description in appearance, size, and flavour, accurately resembled the manna of Scripture. This was firmly believed by him and the people of the country to have fallen there as a dew from heaven.

“ I should, however, have scarcely ventured on his single evidence to narrate a story, in appearance little worthy of attention or credence, had not several Bedouins of the country, with whom I have conversed, bore testimony to the same effect: and, as being likely to lead to the knowledge of some substance with which we are at present unacquainted, it may not be considered unworthy the inquiry and investigation of future travellers. But a manna, differing in some respects from all those which I have specified, is found near to Mount Sinai, and has been regarded with peculiar interest, in consequence of its connection with one of the most striking events recorded in Scripture history. The tree which produces it here is the *Tamarix Mannifera* of Ehrenberg, a species differing from that found on the sea-coast, and nearly related to the *Tamarix Gallica*, but from which, beyond obtaining a greater height, and being somewhat more bushy in its foliage, it has little otherwise of importance to distinguish it. The substance produced by these trees, to which the designation of *manna* has been given in Europe, retain in *Mun*, among the Arabs, the name bestowed on this food of the wilderness by their collateral ancestors the Hebrews.

“ It is found collected in small globules on the branches of the trees, and falls during the heat of the day beneath them. Whether the Sinai manna be an animal or vegetable substance, it is hoped will no longer be an undecided question, since there is not only ample proof that the exudation is occasioned by the puncture of a small species of coccus, named by Ehrenberg the *Coccus Mannifera*, which, together with the peculiar mode in which its labours are conducted, is figured in his work; but at the period of my visit in September, although, after the minutest inspection, no insects were visible, yet the extremities of the twigs and branches,

where they are commonly found, retained that peculiar sweetness and flavour which characterises the manna.

“The Bedouins collect it early in the morning, and after straining it through cloths, place it in either skins or gourds. A considerable quantity is consumed by themselves, a portion is sent to Cairo, and some is also disposed of to the monks at Mount Sinai. The latter retail it to the Russian pilgrims, who receive it with much reverence, as an incontestable proof of the event to which it refers. The Bedouins assured me, that the whole quantity collected throughout the peninsula, in the most fruitful seasons, did not exceed one hundred and fifty wogas (about seven hundred pounds); and that it was usually disposed of at the rate of sixty dollars the woga. They regard it as a luxury, and use it for all the purposes of honey; but if taken in any large quantity, it is said to prove a mild laxative. In this respect, therefore, it bears a resemblance to the manna of commerce; but here it is only collected in seasons after heavy rains, and has sometimes been withheld for a period of seven years. From its having retained the name, and being found in such a locality, the thoughts naturally wander to the event recorded in Holy Writ; and, though well pleased, could we establish a further identity with the substance there described, yet, when we are told that the latter rained from heaven, was collected during six days only, and would not keep more than one, we are compelled, however reluctantly, to abandon further expectation of doing so.”

For our own part we abandon this expectation without the least reluctance. Either the Israelites *did* as the Scriptures affirm, or they *did not* eat “bread from heaven” in the wilderness. We can conceive no middle alternative; and it is, to our notions, anything but consistent with sound judgment to expect to find in the manna-bearing tamarisk, or in that of any other tree which could grow in the wilderness, the substance which afforded food for forty years to the millions of Israel. It is easier to conceive how the produce of this and other trees acquired the name of *mun* or *man*, from its real or supposed resemblance to the substance which nourishes the Israelites, than to imagine the mighty forests of tamarisks, which, according to the usual rate of production, would have been needed to afford the Hebrews subsistence for a single week; or how such supplies could be obtained throughout the year, and one year after another, from a shrub that only yields its product in the month of June; and this besides the very satisfactory reasons given by Mr. Wellsted himself. Let us receive the downright miracle as the lesser difficulty.

Regarding this, therefore, simply as a curious natural product, we return to the tamarisk to afford some further information not contained in the preceding extract.

Mr. Wellsted states that the trees grow from fifteen to twenty feet in height. Our further information is collected from Burckhardt.

The “manna,” as it is called, is found only in years when copious rains have fallen. Then, in the month of June, it drops from the thorns of the tamarisk upon the fallen twigs, leaves, and thorns, which always cover the ground beneath the tree in its natural state. It is always collected before sunrise, when it is coagulated; but it dissolves as soon as the sun shines upon it. The Arabs clear away the leaves, dust, etc., boil it, strain it through a piece of coarse cloth, and put it into leathern skins. In this way they preserve it till the following year,<sup>a</sup> and use it as they do honey, to pour over their unleavened bread, or to dip their bread into. Burckhardt obtained a specimen of the preceding year’s produce at the convent of St. Catherine, where, having been kept in the cool shade and moderate temperature, it had become quite solid, and formed a small cake. It became soft if kept some time in the hand; if placed in the sun for five minutes, it dissolved; but when restored to a cool place, it became again solid in a quarter of an hour. In the season at which it is gathered by the Arabs it never acquires that state of hardness which will allow of its being pounded, as the Israelites did with their manna.<sup>b</sup> Its colour is a dirty yellow; its taste is agreeable, somewhat aromatic, and as sweet as honey. If eaten in any considerable quantity, it is said to be slightly purgative.

The quantity of manna collected at present in seasons when the copious rains fall does not

<sup>a</sup> The Scriptural manna could not be preserved from one day to another, except by a special providence, as on the seventh day.

<sup>b</sup> Num. xi. 8.



amount to more than 500 or 600 pounds. It is entirely consumed among the Bedouins, who consider it the greatest dainty which their country affords. The harvest is usually in June, and lasts for about six weeks, but sometimes it begins in May.

The *tamarix mannifera* is confined to a few localities in Sinai; but the closely allied species, the *tamarix gallica*, of which the other seems merely a variety, abounds throughout the peninsula, as well as in the land of Edom and in Palestine.

Before leaving this subject we wish to advert to the wonderful statement which Lieutenant Wellsted informs us he received from a learned and travelled Rabbi. This is doubtless the Rabbi David D'Beth Hillel, a copy of whose book of Travels,<sup>a</sup> printed in India, has fallen into our hands. We find that the account he there gives refers not to the neighbourhood of Damascus, but to that of Sulimaniah, the capital of lower Koordistan. He says, "There is to be found here, in summer, manna which comes every morning by the dew. That which falls on the rock is as white as snow; but it is very scarce to get, because it is taken for the governor and the nobles: that which falls on trees or grass is white and green, because it becomes united with the leaves and the grass. This is found in great abundance. They sell it made up into balls. That which remains in the fields at the rising of the sun becomes as water. I have eaten it myself: it is sweet, and of a pleasant taste, and is used by the people as a medicine. The name of it in the native language and in Arabic is *Mann Shemma*, which means 'heavenly manna.'"

We have thought it right to adduce this statement; but we shall offer no remarks upon what as yet rests only on the authority of so very credulous a person as the Rabbi Hillel's book evinces him to be. That he ate the substance he describes, and that it was called manna, we doubt not; nor do we question that he was told what he reports as to the mode of its production. But from this report we must withhold, or rather suspend, our belief, on the grounds,—that the thing is physically improbable in itself, and therefore needs strong evidence; that the two accounts given by the same person are contradictory in place and circumstances; and that travellers and residents much better acquainted than Rabbi Hillel with the respective neighbourhoods of Damascus and Sulimaniah, take no notice of any such phenomenon or product as he describes. If produced near Damascus, so remarkable a fact could not have escaped the curious research of Burckhardt, who travelled to and from that city at all seasons and in various directions. And as to Sulimaniah, we can say, that nothing of the kind occurred to our own knowledge while in that place or travelling in its neighbourhood; and, which is much more important, Mr. Rich, who spent a summer there, and was curious in all matters of the sort, has not a word respecting any such phenomenon, of which, if exhibited, it seems impossible that he should not have been informed.<sup>b</sup> Sir John Macdonald (Kinneir) who was intimately acquainted with the country and neighbourhood, is also quite silent on the subject. The weight of this negative testimony seems to us to outweigh the affirmative of Rabbi Hillel. That affirmative derives little weight from the corroborating testimony which Mr. Wellsted obtained from the Bedouins, as, besides being adepts at what is vulgarly called "hoaxing," they will tell a traveller anything which (from the hints offered by his questions) they judge calculated to please him, or likely to meet his views.

We know that the plantain-tree<sup>c</sup> exists in Palestine; but we have been able to find no information of its condition there. It is probably, therefore, not common. We notice it now because it begins this month to afford its excellent fruit, and continues to do so until the latter end of October. This fruit is sweet, rather hard, or between a pear and a date, a little viscid and mealy, melting in the mouth without being chewed. It soon turns sour, and cannot, in Egypt, be kept five days after being separated from the tree. This is the fruit which Rauwolf, Russell, and others, mention under the name of "Adam's apple;" which name was employed by the older naturalists and travellers under the notion that it was the forbidden fruit; while others found in it the *grapes* which the spies brought to Moses out of the Promised Land.

<sup>a</sup> 'The Travels of Rabbi David D'Beth Hillel; from Jerusalem, through Arabia, Koordistan, part of Persia and India, to Madras.' Madras, 1832.

<sup>b</sup> See the 'Narrative of a Residence in Koordistan,' by J. C. Rich, Esq. 1836.

<sup>c</sup> *Musa paradisiaca*.

Besides these honours, Hasselquist calls the tree “the *queen of plants*,” and Dampier designates the fruit as “the *king of fruits*,” which sufficiently indicates the estimation in which it has been held. The plantain perfects its fruit at Aleppo, and also in the neighbourhood of Rosetta in Egypt, and we may therefore safely conclude that it is not barren in Palestine.

The banana,<sup>a</sup> the near congener of the plantain, is also found in the country, chiefly on the coast, under Lebanon. Volney<sup>b</sup> says that the bananas of Beirout are not inferior to those of St. Domingo. The fruit of the banana, although less luscious than that of its congener, the plantain, is of a more delicate taste.

Captain Mangles took notice, early in this month, of a white-flowered variety of oleander growing in Wady Wale, beyond Jordan.<sup>c</sup> This is very rare. Seeing that the oleander is so constantly found by the waters of Palestine, there is some interest in the question proposed by Hasselquist, who, in one of his letters to Linnæus, writes:—“I request you will please to ask Dr. Celsius<sup>d</sup> whether the writers on Scripture plants have ever thought what vegetable David refers to in Psalm i. 3, under the name of the Tree of the Righteous. David attributes qualities to the tree which plainly show that he has in view some particular vegetable. And these qualities are such that they cannot be attributed to any but the *nerium* (oleander) which grows in abundance in this country.”

The shrub *gharkad* is often named by Burckhardt. This is the *peganum retusum* of Forskal, with spinous downy branches, and somewhat fleshy leaves. We know not if it grows in Palestine, seeing that we find only the *peganum harmala*, or Syrian rue, named by travellers in that country. This also is, however, probably there, seeing it is found abundantly in the Sinai peninsula, as well as among the sands of the Egyptian Delta. Its small red berry, of the size of a grain of a pomegranate, is very juicy and refreshing, much resembling a ripe gooseberry in taste, but not so sweet. The Arabs are very fond of it; and Burckhardt was told that when the shrub produces large crops, they make a conserve of the berries. The *gharkad* delights in a dry sandy soil, and reaches its maturity in the height of summer, when the ground is dried up, exciting an agreeable surprise in the traveller at finding so juicy a berry produced in the driest soil and season.<sup>e</sup>

A gum or resin, called by the druggists *cedrum* or *cedria*, is, during the summer, obtained from the *cedar*. It distils spontaneously from the bark under the summer heat, without any incision being made, although this is done when a greater quantity is desired than the natural distillation will afford. It hardens into a clear white resin, to which great medicinal virtues are ascribed.<sup>f</sup>

The *early figs*, both black and white, ripen in the month of June. They fall off, however, as soon as they are ripe; or, according to the allusion of the prophet Nahum, (iii. 12), “fall into the mouth of the eater upon being shaken.” It is when this boccure, or early fig, draws nigh to perfection, that the *hermouse*, which is the summer-fig, or proper carica, begins to be formed, although it rarely ripens before August.<sup>g</sup> To prevent this from falling off and degenerating, the process of *caprification* is performed, or else one of the male trees is placed among the females; the former course is taken in Barbary, where one male tree is found to suffice for fifty females; but the latter is preferred in Egypt, where the male trees are more numerous.<sup>h</sup> As this is but a poor account of the matter, and a fuller explanation would run much into detail, we have introduced a further account of the operation in a note below.<sup>i</sup>

<sup>a</sup> *Musa sapientum*.

<sup>b</sup> Voyage, i. 296.

<sup>c</sup> ‘Travels,’ 462.

<sup>d</sup> The celebrated author of the ‘*Hierobotanicon*.’

<sup>e</sup> Burckhardt, 474. He asks, “Might not the berry of this shrub have been used by Moses to sweeten the waters of Marah?” Exod. xv. 25.

<sup>f</sup> D’Arvieux, ii. 418, 414.

<sup>g</sup> Shaw, i. 264; ii. 149.

<sup>h</sup> Hasselquist, 414.

<sup>i</sup> The best account of the process of CAPRIFICATION is perhaps that furnished by Tournefort. The process described by him is indeed that followed in Greece, but all the particulars are equally applicable to Palestine. The following is the substance of his account:—

“Of the thirty species or varieties of the domestic fig-tree which are cultivated in France, Spain, and Italy, there are but two cultivated in the Archipelago. The first species is called *ornos*, from the old Greek *erinos*, which answers to *caprificus* in Latin, and signifies a wild fig-tree. The second is the domestic or garden fig-tree. The former bears successively, in the same year,

Captain Mangles, when near the hot-springs of Calirrhoe, beyond the Dead Sea, writes :—“ A very singular plant grows near the hot sources, of the bulk and stature of a tree. Its foliage does not seem to differ from that of the common broom. It bears a pod hanging down from it, about fourteen inches in length, fluted with convex ribs from the end to the point. We never met with this before.” It is much to be regretted that Captain Mangles, who appears to have seen more nondescript plants than any other traveller in Palestine, had not *before* his journey in that country acquired that love for, and acquaintance with, plants, by which he has since so honourably distinguished himself, and to which this country has become indebted for some of the most beautiful foreign plants which it possesses.

THE VINE.—Numbers of grapes ripen in this month; but the proper grape season is not yet. Troilo<sup>a</sup> ate fresh grapes in Lebanon towards the end of this month.

GRAIN.—The operations of the harvest continue during at least the early part of this month in full vigour. Of these we have sufficiently treated under May.

ESCULENT VEGETABLES.—Melons become ripe and fit for use at the latter end of June in the valley of the Jordan, particularly on the borders of the Lake Tiberias. Burckhardt being there on the 23rd, writes :—“ The heat of the climate would enable them to grow almost any tropical product; but the only produce of their fields are wheat, barley, dhourra, tobacco, melons, grapes, and a few vegetables. The melons are of the finest quality, and are in great demand at Akka (Acre) and Damascus, *where that fruit is a month later in ripening*. Knowing how fond the Syrians in general are of the early fruits, I sent to my friends at Damascus a mule's load of these melons, which, according to eastern fashion, is a very acceptable and polite present. About 350 pounds, English weight, of melons, sell at Tabaria (Tiberias) for about eight shillings.<sup>b</sup> The musk-melon<sup>c</sup> is probably intended, as it appears about a month earlier than the water-melon. It is remarkable that the melon is ripe at Aleppo in June, although this was regarded by Burckhardt as extraordinarily early in Palestine.

To the same season with the musk-melon, Russell informs us, belong also the adder-

three different sorts of fruit, called *formites*, *cratitires*, and *orni*; which, though not good to eat, are found absolutely necessary towards ripening those of the garden-fig. These fruits have a sleek even skin, are of a deep green colour, and contain in their dry and mealy inside several male and female flowers placed upon distinct foot stalks, the former above the latter. The *formites* appear in August, and continue to November without ripening; in these are bred small worms, which turn to a sort of gnat nowhere to be seen but about these trees. In October and November, these gnats of themselves make a puncture into the second fruit, which is called *cratitires*. These do not show themselves till towards the end of September. The *formites* gradually fall away after the gnats are gone; the *cratitires*, on the contrary, remain on the tree till May, and inclose the eggs deposited by the gnats when they pricked them. In May, the third sort of fruit, called *orni*, begins to be produced by the wild fig-trees. This is much bigger than the other two, and when it grows to a certain size, and its bud begins to open, it is pricked in that part by the gnats of the *cratitires*, which are strong enough to go from one fruit to another to deposit their eggs. It sometimes happens that the gnats of the *cratitires* are slow to come forth in certain parts, while the *orni* in those very parts are disposed to receive them. In this case the husbandman is obliged to look for *cratitires* in another part, and fix them at the ends of the branches of those fig-trees whose *orni* are in a fit disposition to be pricked by the gnats. If they miss the opportunity, the *orni* fall, and the gnats of the *cratitires* fly away. None but those that were well acquainted with the culture know the critical moment of doing this; and in order to know it, their eye is perpetually fixed on the bud of the fig; for that part not only indicates the time that the prickers are to issue forth, but also when the fig is to be successfully pricked: if the bud is too hard and compact, the gnat cannot lay its eggs; and the fig drops when the bud is too open.

“ The use of all these sorts of fruit is to ripen the fruit of the garden fig-tree in the following manner :—During the months of June and July the peasants take the *orni*, at the time the gnats are ready to break out, and carry them to the garden fig-trees; if they do not nick the moment, the *orni* fall; and the fruit of the domestic fig-tree, not ripening, will in a very little time fall in like manner. The peasants are so well acquainted with these precious moments, that every morning, in making their inspection, they only transfer to their garden fig-trees such *orni* as are well conditioned, otherwise they loose their crop. In this case, however, they have one remedy, though an indifferent one, which is to strew over the garden fig-trees the *asculimbros*, a very common plant there, and in whose fruit there is a sort of gnat proper for piercing; perhaps they are the gnats of the *orni*, which are used to hover about and plunder the flowers of this plant. In short the peasants so well order the *orni*, that their gnats cause the fruit of the garden fig-tree to ripen in forty days.”

That this operation is attended with beneficial effects is scarcely denied by any naturalist; but the mode in which it acts has been very much disputed, particularly as to the part which the gnats take in it. But this is a question for which we cannot find room. The account which we have given from Tournefort embodies the practice and belief of the Orientals in the matter; and this is all we desired to state.

<sup>a</sup> Reise, 66.

<sup>b</sup> Syria, 323.

<sup>c</sup> *Cucumis melo*.

cucumber,<sup>a</sup> kidney-bean, Jew's mallow,<sup>b</sup> esculent mallow, orange-shaped pumpkin, and several varieties of gourd.

The same author gives a further statement respecting esculent vegetables, which, although seemingly referring to the whole summer period, may very suitably be introduced here. According to this, the pot-herbs cultivated in the gardens are,—“coriander, fennel, garlic, onions, leeks, parsley, celery, carraway, cress, fœnu-greek,<sup>c</sup> mint, and fennel flower. But besides the vegetables produced by culture, the fields afford capers, borage, common mallow, sorrel, dandelion, water-cress, and truffles. Savory, wild as well as garden, is much used by the natives to give a relish to bread. They pound it when dry, then mix a certain proportion of salt, and dip their bread in it at breakfast or after meals. Mustard<sup>d</sup> is little used except by Franks: it is found in abundance growing wild, but is not cultivated. The *shikukool*,<sup>e</sup> or Syrian hartwort, grows plentifully in the fields. It is sometimes confected in the manner of eringo-root, but is not much in use. Liquorice grows in great abundance towards the desert; and vast quantities of it are consumed in making a decoction which is drank cold, in the manner of sherbet, in the summer.

All this appears to apply equally to Palestine, where all the plants enumerated are found. Few of them require further remark than is connected with them in this statement. In Palestine, liquorice is chiefly cultivated along the coast towards and under the Lebanon mountains. The mention of “truffles” reminds us to turn to a passage in Burckhardt's ‘Notes on the Bedouins,’ where he writes of a kind of truffle (much resembling the true truffle in shape and appearance) which grows in the desert without any appearance of either root or seeds. It is called *kemmāye*, or *kemmā* (or, in the Bedouin dialect, *jeme*). There are three varieties of it, the red (*khelāsy*), the black (*jebah*), and the white (*zebeidy*). If the rain has been abundant during winter, the *jemes* are found at the end of March. They lie about four inches under the ground. The place where they grow is known by a slight rising of the ground over them. If the fruit is left to attain full maturity, it raises about half its volume above the earth. It forms a favourite dish of the Arabs, and is therefore much sought after by them. The children and servants dig it up with short sticks. They are sometimes so numerous in the plain, that the camels stumble over them. Each family then gathers four or five camels' loads; and while this stock lasts, they live exclusively on *kemmāye*. These truffles are boiled in water or milk till they form a paste; but they are sometimes roasted, and eaten with melted butter. If they have been very abundant, they are dried in the sun, and afterwards dressed for use like fresh ones. Great quantities are consumed by the people of Damascus and the peasants of eastern Syria. In general they are worth, in Damascus, about a halfpenny the pound. They are brought to that city from the district on the eastern limits of the Lake Merdj. To Aleppo they are brought from the great plain adjoining Jebel el Hass. Camels do not eat *kemmāye*. The great desert or plain between Damascus, Bagdad, and Basrah, abounds with it. Of this production a similar account is given by Mr. Addison,<sup>f</sup> who speaks of it as “a kind of mushroom;” and as “a wonderful and bountiful provision of nature for supplying food to the Bedouin Arabs in the spring.”

The *tomato*, or love-apple, is mentioned by Dr. Russell, who states that at Aleppo it used only to be raised in pots like other flowering plants. But in his time it had lately come into cultivation, and was brought to the bazaars. The use of it was introduced among the Franks at Aleppo by an English gentleman who had resided long in Spain and Portugal. This fruit is hence by the natives called *Frank bandijan*. It is the *solanum lycopersicum*.

Another species of *solanum* is named by Russell as a principal article in the diet of the people. This is “the mad-apple,”<sup>g</sup> as he calls it; but better known now as “the egg-plant.” There are three varieties of it, all of which make their appearance in June; but one most abundant in the four succeeding months; and are in general request at the tables of every class of the people. They are even dried, or preserved in salt, so as to furnish an occasional

<sup>a</sup> *Cucumis flavus*.

<sup>d</sup> *Sinapis orientalis*. See before, p. ccliii.

<sup>f</sup> ‘Journey to the East,’ li. 350.

<sup>b</sup> *Corchorus olitarius*.

<sup>c</sup> *Trigonella fœnu-græci* n.

<sup>e</sup> *Tordylium Syriacum* n.

<sup>g</sup> *Solanum melongena*, Linn.

dish during the winter. The use of this species of solanum is not at all peculiar to Syria ; for both this and the preceding are cultivated in the south of Europe, for the sake of the fruits, which are used to impart an agreeable acid flavour to soups and sauces.

The other species of solanum that grow in Palestine are the *Solanum sodomium*, the *S. incanum*, *S. nigra*, and the *S. furiosum*.



[*Solanum Sodomium*.]

So badly are the names and synonyms of this numerous genus distinguished, that we are not sure the last named may not be identical with the first ; or that *S. sodomium* itself may not, as Hasselquist seems to state,<sup>a</sup> be identical with the *S. melongena*. However, taking them to be different, we observe that, as the name expresses, the *S. sodomium*, is so called from its being one of the plants found in the neighbourhood of the Asphaltic Lake, the qualities of whose fruit has suggested its identity with the famous "apples of Sodom" of which so much has been said. We have, therefore, judged that the figure of it which we have introduced may be acceptable to the reader. Of the "apples of Sodom," we shall very soon have some inquiries to make. Another of the species named (if it be another) *solanum furiosum* is called *defle* by the Arabians. It grows abundantly beside the waters of Israel and Edom, often along with the willow and tamarisk. It is found on the borders of the Lake of Tiberias, and beside the streams which fall from the East into the great valley of the Ghor,<sup>b</sup> and appears to attain a considerable size. In one place Burckhardt calls it a tree ; but that term, as well as "shrub," is used by him in a very loose manner.

PLANTS.—The celebrated *hennah* plant<sup>c</sup> comes into flower in May or June, and sometimes continues to produce its rich blossoms until August. This plant, which is most abundant in Egypt and Arabia, and is not wanting in Palestine, grows in a shrubby stalk to the height of eight or ten feet, under favourable circumstances. The first good figure and clear account of this plant was given by Sonnini ;<sup>d</sup> and, omitting his technical details, we may follow him in representing the henna as a plant most grateful to the eye and smell. The dark colour of its bark, the light green of its foliage, the softened mixture of white and yellow, with which the flowers, collected into long clusters like the lilac, are coloured ; the red tint of the ramifications which support them, form a combination, the effect of which is highly agreeable. The flowers, whose shades are so delicate, diffuse around the most grateful odours, and embalm with their strong fragrance the gardens in which they grow and the apartments which they



[*Lawsonia inermis*]

<sup>a</sup> Enumerating what he found on the borders of the Dead Sea, he has:—" *Forma sodomitica*, mud apples are the fruit of *Solanum melongena*."

<sup>b</sup> See Burckhardt, 320, 369, 370, 373, 401.

<sup>c</sup> *Lawsonia inermis*.

<sup>d</sup> 'Voyage dans la Haute et Basse Egypte,' 17:9.

adorn. The women take pleasure in decking their persons and apartments with these delightful blossoms; although it is said that the odour of the dried flowers is intolerable to a woman who has conceived.<sup>a</sup> But it is not the flower, however fragrant, which constitutes the chief value of this plant to the women (and even, in some degree, to the men) of the East. The leaves of the plant are dried and pulverised, and then made up into a kind of paste, which is a powerful astringent dye, and is applied to desiccate and discolour the palms of the hands, the soles of the feet, and the nails of both. It gives to these parts the colour of iron rust; and however frequently the hands and feet may be washed over with water and soap, the dye remains for two or three weeks before it requires to be renewed. Most travellers deride this usage as purely whimsical or ridiculous. But, on our old travelling principle, that there is no custom, however it may strike a stranger, so gratuitously absurd, as not to possess some original or latent show of reason for its commencement and continuance, we made inquiries on the subject, and found that, besides the mere fashion of the thing, this astringent dye, by closing the pores, checked the perspiration of the parts to which it was applied; and in climates so warm as to keep persons almost constantly in a state of sensible perspiration, it is found a great comfort to have the palms of the hand and the soles of the feet in a comparatively dry state; particularly as to the hands, which would otherwise moisten whatever they handled.

The application of another paste, composed of wheat flower and water with a small quantity of sal ammoniac and quicklime, upon the parts which have been coloured by the *henna* dye, changes them to a dark greenish-blue colour, which soon darken into a deep black. Singular as it may seem, the Syrian ladies choose to make this further application to their persons in order to produce contrasted rings of black and white (if we may so call the colour of the skin) and figures of stars, roses, and other flowers; but instead of being a habitual practice, as Sonnini seems to report, it is only, as Russell alleges, resorted to on festival occasions. The further application to turn the dusky yellow of the henna dye into black is however much used (particularly in Persia) by the men to give a black dye to the hair of their heads and beards. Hence the deep glossy black universally displayed by the Persians in their beards and locks of hair. It requires to be renewed every fortnight or three weeks. In Syria and Egypt men are not so much as in Persia addicted to this practice. Some men and women are satisfied with the effect which the henna dye alone produces in their hair; but this effect is unpleasant on a European, who cannot identify it with any natural shade of red or yellow hair to which in his own country he may have been accustomed. There is also a singular fancy for applying *this* dye to the tails and manes, and to describe lines and figures with it upon the hides, of white horses and asses.

The custom of dyeing, at least the nails, with this drug is of a very ancient date, for those of the old Egyptian mummies are most commonly of a reddish hue. Whether the Jews employed the dye in any way to their persons, we have no means of knowing. That, like the Egyptians, they used it to colour their nails, may perhaps be collected from Deut. xxi. 12; which instead of "pare her nails," might very well be understood "adorn her nails." But it was used as a dye for ordinary purposes;<sup>b</sup> and the flowers were used in their perfumes; for which last purpose the flowers of the plants which grew in the neighbourhood of Ascalon were preferred to those of Egypt.<sup>c</sup> This, however, assumes that the plant is the copher (כפר) of the Hebrews, and the *kupros* of the Greeks, which is a point very little doubted. In that case it is the "camphire" in our version of the Canticles (c. 14; iv. 13.), in which there is a beautiful allusion to the clustering flowers, and to the practice, still subsisting among the ladies of Egypt, of wearing them in their bosoms.

Perhaps this month is as proper as any for the mention of the roses of Palestine. The principal species in that country are the white garden rose,<sup>d</sup> the hundred-leaved<sup>e</sup> (or damask<sup>f</sup>)

<sup>a</sup> Hasselquist, 246.

<sup>c</sup> Plin. Nat. Hist. l. xii. c. 51.

<sup>b</sup> Mishna, tit. Sheviit, sive de jure anni sept. c. vii, sect. 6.

<sup>d</sup> *Rosa alba*.

<sup>e</sup> *R. centifolia*.

<sup>f</sup> *Rosa Damascena*. These two species (*R. centifolia* and *R. Damascena*), are not well distinguished. Some regard the latter merely as the Linnaean name of the Damask rose, while others regarded them as applied to different species. This is a question with which we have no desire to interfere. But we are on all occasions averse to the erection of mere varieties into distinct species.

rose, the yellow rose,<sup>a</sup> and the evergreen rose.<sup>b</sup> The Syrian origin of the damask rose is indicated by its name, which refers it to Damascus. In the gardens of that city roses are still much cultivated. Monro says that in size they are inferior to *our* damask rose, and less perfect in form; but that the colour and odour are far more rich. The only variety which exists in Damascus is a white rose, which appears to belong to the same species, differing only in colour. The same traveller<sup>c</sup> found, in the valley of Baalbaec, a creeping rose of a bright yellow colour in full bloom about the end of May. About the same time, on advancing towards Rama and Joppa from Jerusalem, the hills are found to be to a considerable extent covered with white and pink roses.<sup>d</sup> The gardens of Rama itself abound in roses of a powerful fragrance.<sup>e</sup> Burckhardt was struck by the number of rose-trees which he found growing wild among the ruins of Boszra beyond Jordan;<sup>f</sup> and the same traveller informs us that roses are cultivated with much success in the gardens of Mount Sinai.<sup>g</sup>

According to the Rabbinical authorities, no gardens were allowed *within* the walls of Jerusalem—seeing that the gardens would require the soil to be manured, whereby the holy city would have been polluted. A few *rose gardens* only (which had existed from the days of the prophets) were allowed.<sup>h</sup> At present the vicinity of Jerusalem does not appear very congenial to the rose.

There is no evidence that the ancient Jews knew how to obtain, or rather, were in the habit of extracting essential oil (or *attar*) of roses; or even that they cultivated roses for the manufacture of rose-water. We do not suppose that the means were unknown to them of extracting, in some form or other, this most exquisite of perfumes; but they probably found it cheaper to purchase it from countries more favourable to the culture,—perhaps from Egypt, where, at the present day, large tracts of land in the province of Faioum are planted with roses, solely for the manufacture of rose-water. The white rose, or a variety of it, is that which is cultivated for this purpose. It is not quite white, but a very pale bluish colour. It is double, and often as large as a man's fist. Hasselquist says that these roses emit the most fragrant odour he ever knew. This species is preferred in other parts for the same use. It is long lived, but its full productive vigour is from the second to the fifth year (both inclusive), in consequence of which, after the latter year, new plants are substituted.<sup>i</sup>

"The rose of Jericho,"<sup>k</sup> although no rose, may very suitably be noticed under this month, as it is now in blossom. It grows spontaneously in Palestine, particularly near the Dead Sea and the Jordan, and is also found on the borders of the Red Sea, and near Cairo in Egypt, delighting in sandy places. Although an annual plant, the stalk is ligneous, rising to the height of five or six inches, dividing into several irregular branches. The flowers are small and white, and possess but little beauty. They are succeeded by short prickly pods containing the seeds. Its chief ground of notice is the remarkable circumstance that, although an annual, it may be long preserved, if taken up entire before it begins to wither, and kept in a dry room. After it has been many years in such a situation, if the root be placed for a few hours in a glass of water, the buds of flowers will swell, open, and appear as if but newly taken out of the ground. D'Arvieux<sup>l</sup> says he sought for these plants in



[Rose of Jericho. *Anastatica hierochuntica*.]

<sup>a</sup> *Rosa sempervirens*.

<sup>c</sup> D'Arvieux, ii. 24.

<sup>i</sup> See more in Hasselquist, 248, and Giraud's *Agricult. de l'Egypte*, in *Descript. de l'Egypte*, tome xvii. p. 117.

<sup>k</sup> *Anastatica hierochuntica*.

<sup>b</sup> 'Ramble,' ii. 67.

<sup>f</sup> 'Syria,' 236.

<sup>g</sup> Id. 583.

<sup>e</sup> Vol. ii. p. 90

<sup>d</sup> Elliot, ii. 503.

<sup>h</sup> Lightfoot, *Exercit. upon Matt.* xxvi. 36.

<sup>l</sup> Tome ii. p. 189.

vain near Jericho, from which they derive their name; and he is equally perplexed to know why it is called a *rose* at all, and why the *rose of Jericho*. He expressively enough calls these plants "*higrometres naturels*." The probability is, that, being an annual, it had not grown up at the time of his visit (April), and it certainly could not then be in blossom; but that it is found in the neighbourhood is distinctly affirmed by various travellers,<sup>a</sup> some of the more devout of whom find matter for edification in the contrast between its humble and unattractive appearance and the "immortality" of its nature.

JULY.

**WEATHER.**—There is little difference between the weather of this month and the preceding, except that the heat is rather increased, and that the sky remains almost invariably serene.

The westerly winds blow fresh, and when they fail, the weather becomes excessively hot.

The greatest height registered by Dr. Russell's thermometer at Aleppo was 101°; and although he explains in a note that the mercury seldom rose so high, it is to be remembered that his instrument was kept in a station somewhat cooler in summer than the external air. The lowest point was 77°; and the greatest variation in any one day 18°. The morning station of the mercury at the beginning of the month was 80°, and towards the end 85° or 86°; the difference between the morning and afternoon was generally from 8° to 10°.

In a portion of July and a few of the last days of June we enjoy the advantage of the thermometrical observations of Dr. Clarke, who travelled this month in Palestine, which will be found to agree closely with the results obtained by Dr. Russell at Aleppo:—

Observations on the Scale of Fahrenheit.	Where Made.	When Made.	At London on the same Days.
81	Off Cape Carmel . . . . .	June 28	78
81	Bay of Acre . . . . .	„ 29	80
86	Bay of Acre . . . . .	„ 30	70 ½
83	Bay of Acre . . . . .	July 1	68
80	Bay of Acre . . . . .	„ 2	70
82	Bay of Acre . . . . .	„ 3	64
85	Nazareth . . . . .	„ 4	70
100	In a cave near Turan <sup>b</sup> . . . . .	„ 5	70
94	Lubi . . . . .	„ 6	69
96	Arab Tent in the Plain of Esdraelon . . . . .	„ 7	73
93	Naploose, in the olive-ground . . . . .	„ 8	70
98	Bethel . . . . .	„ 9	66
87	Jerusalem (Convent of St. Salvador) . . . . .	„ 10	66
90	Jerusalem (Convent of St. Salvador) . . . . .	„ 11	67
87	Jerusalem (Convent of St. Salvador) . . . . .	„ 12	66
88	Bethlehem . . . . .	„ 13	70
86½	Rama . . . . .	„ 14	73
85	Jaffa . . . . .	„ 15	68
83	Off the coast of Casarea . . . . .	„ 16	60

The reader may be much instructed by noting the differences produced by change of situation in the same country. We see that when the traveller remained several days in one place, the temperature is nearly equal; but great differences appear when he moves from the coast to the interior, from the hills to the plains and valleys, and from them back again to the hills. The travellers who have recorded their observations on this month are remarkably few; probably from the inconvenience of journeying in weather so very warm. Clarke is the chief

<sup>a</sup> See Cotovic, 213; Nan, 351; Morison, 517; Mariti, 319.

<sup>b</sup> Turan is three miles beyond Cana, towards the Lake Tiberias. Later in the day (twelve miles north-east of Mount Tabor) the thermometer, in the most shady situation that could be found, indicated 102½°.



July traveller, and he says, "All the pleasure of travelling at this season of the year in the Holy Land is done away by the excessive heat of the sun."<sup>a</sup>

The following observations on the weather of the month are from Paxton, the recent American traveller. The reader of course will make some allowances (with respect to the clouds chiefly) from the fact that they were made at Beirout, on the sea-shore, and under the Lebanon mountains.

He observes that nearly two months had passed since his arrival, and during all that time not a drop of rain had fallen. There had been scarcely any weather that could be called cloudy. It is true that some clouds do at times collect over the sea, and at times they rest on the mountains; but they are clouds without rain. They very seldom spread over the face of the heavens, so as to withhold the light of the sun. They are mostly confined to one part, and leave the remainder in its usual clearness. "I have again and again," adds the traveller, "been reminded of the fact that one day is almost precisely as another. They have no opportunity to say, 'This is a fine day:' all are fine.

**TREES AND SHRUBS.**—Various fruits may be obtained in July; but there are none which can be said to be this month properly and distinctively in *season*. Apples, pears, plums, peaches, dates, may all now be had. We have already noticed the pooriness of the apples; and it may be noticed that the fruits which are the best in England are the worst there; while those that are indifferent here, there attain their perfection. Thus apples are bad; pears better, but rather indifferent, except in a few favourable situations; but the plums, peaches, nectarines, and grapes, are very far superior to any which this country affords, and cannot anywhere be excelled. *Monro*,<sup>b</sup> at Damascus, writes:—"The peaches, nectarines, and apricots, hang clustering from trees of timber. The plums, which are the old stock, whence come our damascenes—and which, by the way, are well spoken of by Pliny—are more than double the size of those in England. There is also another plum, not known with us, round and very full of juice, containing a stone resembling that of a cherry." Dates become ripe early in July in the great valley of the Jordan, and on the borders of its lakes; later elsewhere, even in Egypt. The palm-trees which are found in the neighbourhood of Jerusalem seldom mature their fruit.<sup>c</sup> The fruit of the olive-tree is ripe in July and August.

Burckhardt this month takes notice of "the Beyrouk honey," or, as the Arabs call it, *Assal Beyraut*, as one of the most interesting productions of the great valley of the Jordan and its lakes. He never had an opportunity of seeing it himself; but it was described to him as a juice dropping from the leaves and twigs of a tree called *gharrab*, of the size of an olive-tree, with leaves like those of the poplar, but somewhat broader. The "honey" collects upon the leaves like dew, and is gathered from them, or from the ground under the tree, which is often found completely covered with it. According to some its colour is brownish; others said it was of a grayish hue: it is very sweet when fresh, but turns sour after being kept two days. The Arabs eat it like honey, with butter;<sup>d</sup> they also put it in their gruel, and use it in rubbing their water-skins to exclude the air. The Beyrouk "honey" is collected only in May, June, and the beginning of July. Some persons assured Burckhardt that the same substance was likewise produced by the thorny tree *tereshresh*, and collected at the same time as that from the *gharrab*.

We feel much interest in this statement, as it occurs to us as not by any means unlikely that the Scriptural description of Palestine as "a land flowing with milk and honey," may have included a reference to such trees, although certainly not designed to apply exclusively to them. We feel more assured that the adventure of Jonathan with the honey which lay on the ground, having dropped from the trees in the wood, must apply to such productions, and probably to that which comes from this very tree.<sup>b</sup>

Another tree, growing in the mountains of Seir, is mentioned by the same traveller, as pro-

<sup>a</sup> "Travels," iv. 235.

<sup>b</sup> Vol. ii. p. 67.

<sup>c</sup> Radzivil, 97; Shaw, ii. 152.

<sup>d</sup> "Butter and honey shall he eat." Isa. vii. 15.

<sup>e</sup> 1 Sam. xiv. 26, 27.

ducing a fruit from which an extremely nutritive juice is extracted by the Arabs. It is called *arar*.<sup>a</sup>

In different parts of the Ghor, and to the east of the Dead Sea, occurs the doom or *theder*-tree. This, notwithstanding the similarity of the name, is very different from the *doum*-palm. "It bears a small yellow fruit, like the *zaarowr*," is Burckhardt's account, which will be better understood by Captain Mangles' explanation, that the tree "bears a small stone fruit, resembling in taste a dried apple." In fact, it was dry, we presume, as Mariti states that it is never eaten fresh, on account of its strongly aperient qualities in that state. The tree is small, with a very hard wood, and its bark like that of the lemon-tree.

Captain Mangles writes of a shrub which he found beside the brook Dara, which falls into the Dead Sea. Its branches have an inclination inward, and are of a dull green, with little or no foliage. It bears a fruit about the size of an almond in its green husk, and not very dissimilar in colour, but having several seams or ribs, like those on the fruit of the green pippin. When it ripens, the skin retains its roughness without, but becomes soft and juicy like a green-gage, and has a sort of sweetness mixed with a strong bitter. "By culture it might perhaps be improved to a pleasant fruit. Some said it was eatable, but others asserted that it was poison, and that children were frequently disordered, or even died, after eating it. There is a stone within it, and the smell is sickly and disagreeable."<sup>b</sup>

**THE VINE.**—Grapes are now, to a considerable extent, ripe, although the vintage is not until September. Breydenbach ate fully ripe grapes at Jaffa about the middle (beginning o.s.) of July; and Korte<sup>c</sup> informs us that this occurs in many parts of Palestine; while in others they remain on the vine till November or even December, after which they can be kept for one or two months.

**GRAIN.**—From the statement in preceding pages the reader will be aware that the operations of harvest are still continued in particular parts of the country, although, generally speaking, the harvest, both of barley and wheat, may be described as over in June. Crops of other grain are, however, still standing, and will engage our notice in subsequent months.

**ESCULENT VEGETABLES.**—Melons, pumpkins, and cucumbers are now seen ripening abundantly on the ground. The water-melons do not appear in the markets until July, and being preserved in grottos or cool cellars, vast quantities are consumed in summer and autumn. Some even preserve them throughout the winter, accounting it a high luxury to eat them in the bath.<sup>d</sup> In Scripture the name of the melon only once occurs,<sup>e</sup> as that of an Egyptian fruit for which the Israelites longed in the wilderness; and the extent to which it is still made to minister to the enjoyment of the inhabitants of that country throw much light upon their feelings and complaints. "The water-melon," Hasselquist writes, "serves the Egyptians for meat, drink, and physic. It is eaten in abundance during the season, even by the richer sort of people; but the common people, on whom Providence has bestowed nothing but poverty and patience, scarcely eat anything else, and account this the best time of the year, as they are obliged to put up with worse fare at other seasons. They eat them with bread, and scarcely ever taste them ripe. This fruit likewise serves them for drink, the juice being most refreshing to these poor creatures; and they have less need of water than if they lived on more substantial food in this burning climate. This fruit also affords physic; but it is not every kind of melon that answers this end. There is a variety softer and more pulpy than the common sort, and not so plentiful. When this is very ripe and almost putrid, they hollow out part of it, gather the juice there collected, and mixing it with rose-water and a little sugar, administer it in burning fevers, being the only medicine the common people use in such distempers."<sup>f</sup>

We are acquainted with no author who mentions a very common use to which the large flat

<sup>a</sup> We regret our inability to identify this and the preceding (*Gharrah*) with any known plant. Neither of the names occur in our extensive list of Arabic names of plants, which (as occasion offered) we have compiled for our own use.

<sup>b</sup> Mangles, 418.

<sup>c</sup> Reise, 435.

<sup>d</sup> Russell, ii. 92.

<sup>e</sup> Num. xi. 5.

seeds of the water-melon are applied. They are salted and roasted dry, in which shape they are sold in the bazaars, and form a strong, but not very delicate, relish, of which some people are very fond. In Palestine melons are cultivated in the low plains of the coast and of the Ghor: nor are they neglected even in the comparatively high plains of the Haouran. The best, however, are those produced in the plains about the base of Mount Carmel; and Volney affirms that the water-melons of Jaffa are superior to the best of Egypt, which are those grown at Burlos.

The other species of *cucurbita* which grow in Palestine are, 1. *The bottle-gourd*,<sup>a</sup> so called from the shape of the fruit, as also, probably, from the extensive use of its shell as a water-vessel among the poor people of various eastern countries. It is grown with great freedom in those parts of Syria, Egypt, and Arabia, where the hills are covered with a rich soil. The Arabs call it *charrah*. It is eaten boiled, and seasoned with vinegar. It is also much used as stuffed with rice and chopped meat, and so boiled as a kind of pudding. The enveloping pumpkin thus forms a vegetable to eat with its contents, and taken together, forms a mess of which we have often partaken with much satisfaction while on a journey, whatever we might have thought of it at home.

2. *The common pumpkin*,<sup>b</sup> which is too well known in this country to need particular notice. But we may mention that in the East it is esteemed the most wholesome of all the *cucurbita*, and is given to sick persons as being cooling and diuretic. In England, pumpkins (properly *pompions*) were formerly called *melons*, and thus then the true melon was distinguished as the *musk-melon*, a name which it still retains with us.

"CUCUMBERS" occur in the same passage of Scripture, and with the same reference to Egypt as "melons," and only once besides,—in that passage which alludes to "a lodge in a garden of cucumbers."<sup>c</sup> They are cultivated abundantly, in the same situations as the melon. In the great valley of the Jordan they are first ripe in June, three weeks sooner than at Damascus; in consequence of which the peasants who cultivated them in the neighbourhood of the Lake Houle find it worth their while to take them all the way to that city for sale.<sup>d</sup> Burckhardt, travelling this month in Gilead, passed among fields of cucumbers, more than a quintal of which were carried off by his (native) companions, when they observed no keepers.<sup>e</sup> This illustrates the allusion of the prophet just quoted; and, in fact, in most extensive fields of melons or cucumbers a man is stationed when the fruit becomes fit to eat, to prevent quantities from being thus carried off. It will be remembered that such fields are unenclosed.

We may as well take the occasion of noticing the other species of *cucumis* which grow in Palestine. 1. *The cucumis chate*, or hairy cucumber, which also enjoys the synonymes of the Egyptian Melon, and the Queen of Cucumbers, ripens with the water melons. Hasselquist writes:—"This fruit is a little watery; the flesh is almost of the same substance as the melons; it tastes somewhat sweet and cool, but is far from being as cool as the water melons. This, the grandees and Europeans in Egypt eat as the most pleasant fruit they find, and that from which they have the least to apprehend. It is the most excellent fruit of this tribe of any yet known. The princes and grandees of Europe might well wish to have it in their gardens, for it is most worthy of a place at their tables." In England, it has not been brought to the degree of excellence which is here ascribed to it.

2. *The snake cucumber*,<sup>f</sup> which came to us from the East Indies, offers equally to Syria and to Egypt its smooth and delicious fruit, which is of an oblong cylindrical form, and about the size of a large pear.

3. The name of *cucumis dudaim* must have been bestowed upon the *apple-shaped cucumber*, under the impression that it was to be identified with the fruit to which the Hebrew Scriptures give the name of *dudaim*, which name we have, with most writers, rather chosen to refer to the mandrake. This also is found in our greenhouses. The fruit is about the size and shape of an orange, and has a vinous musky smell, with a whitish insipid pulp.

<sup>a</sup> *Cucurbita lagenaria*.

<sup>b</sup> Burckhardt, 348.

<sup>b</sup> *Cucurbita pepo*.

<sup>c</sup> Isa. l. 8.

<sup>d</sup> Burckhardt, 316.

<sup>f</sup> *Cucumis serenosus*.

4. The *coloquintida*, or bitter cucumber,<sup>a</sup> is better known by the appearance it makes in the windows of our druggists than from the fact of its growth in our greenhouses, where,



[Coloquintida.]

indeed, all the species which grow in Syria may be found. The very nauseous taste as well as the valuable medicinal properties of this gourd, are too familiar to need description. It is essentially a desert plant: and in the desert parts of Syria, Egypt, and Arabia, and on the banks of the rivers Tigris and Euphrates, its tendrils run over vast tracts of ground, offering a prodigious number of gourds, which are crushed under foot by camels, horses, and men. In winter we have seen the extent of many miles covered with the connecting tendrils and dry gourds of the preceding season, the latter making precisely the same appearance as in our shops, and when crushed, with a crackling noise, beneath the foot, discharging, in the form of a light powder, the valuable drug which it contains. It is found in the plain of Jericho, whence some have sought to identify it with the famous "apples of Sodom," fair to the eye, but within dust and corruption. This distinction has been competed by other plants, and among them by

5. The *globe cucumber*, which, however, derives its specific name, *cucumis prophetarum*, from



[Cucumis Prophetarum.]

<sup>a</sup> *Cucumis colocynthis*.

the notion that it afforded the gourd which "the sons of the prophets" shred by mistake into their pottage, and which made them declare, when they came to taste it, that there was "death in the pot!" This plant is smaller in every part than the common melon, and has a nauseous odour, while the fruit is to the full as bitter as the coloquintida. This fruit has a rather singular appearance, from the manner in which its surface is armed with prickles, which are, however, soft and harmless.

With regard to the "apples of Sodom," to which we have now and before had occasion to allude, we will take this opportunity of making a further statement on the subject. It is by the peculiar appropriateness of this fruit to the associations connected with the Asphaltic Lake that the fancy is gratified or interested. Yet it so happens that all the fruits in which the apples of Sodom have been sought, are such as are more or less common in other quarters; and by this the whole illusion is destroyed. If, therefore, any of these plants offer the "apples of Sodom," we are to conclude that the accounts which report these fruits as strange and wonderful things, originated with persons, whether natives or travellers from the east or west, who did not know that the same existed in the regions beyond. And this is most probably the truth. Our opinion is that the story is "founded on facts," or, that there *does* exist on the shores of the Dead Sea a fruit offering the described appearance and illusion; and that this plant finds the soil and climate of the Dead Sea (or, perhaps, more largely, of the Jordan valley) so congenial to its nature, that it is not found in other parts of Palestine, although it may exist in other countries. In the belief, therefore, that it is not necessary or probable that any such plant should be peculiar to the Dead Sea, we see no objection to any of the plants which have been named, on the mere ground that they are found in other quarters. The only question is, which of them, without being common in other parts of *Palestine itself*, best meets the conditions imposed by the descriptions which have come down to us. The respective claims of "the mad apple," the coloquintida, and the globe cucumber, have been already stated; and we will now furnish the reader with such other information as we have obtained respecting these mysterious "apples."

This was one of the matters on which the Jesuit Nau sought for information from Father Daniel, the superior of the convent of Santa Saba, the trustworthiness of whose information is evinced (as before mentioned<sup>a</sup>) by the particulars he furnished respecting the southern termination of the Dead Sea, which have lately been verified by actual observation. He stated that he had seen, on the western border of the lake, about a day's journey below the embouchure of the Jordan, some of the trees of Sodom of which the ancients had spoken. In height, wood, and manner of growth, it resembled the fig-tree, and the colour and shape of its leaf approached to that of the walnut-tree. The *fruit* had great resemblance, in both form and colour, to the lemon, but it had no solidity or use. Its outward beauty attracted the eye and tempted the hand; but it yielded to the pressure of the hand which grasped it, and appeared a mere emptiness, or rather like a sponge filled with air. In the time of the crusaders Fulk of Chartres saw it in the same quarter, and describes it in similar terms;<sup>b</sup> and, in more precise language, speaks of it as spongy, rotten, and void within.

It would appear that the reports of the Arabs, who alone are well acquainted with the shores of the lake, coincide very well with this account. An acute Arab, who was the sheik of Bethlehem, assured Mr. Elliot that on the *western* shore of the lake trees are seen producing a fruit which, when open, exhibits nothing but smoke or dust. "The description," observes the traveller, "corresponded in some degree to that we found near Thyatira in Asia Minor,<sup>c</sup> as likewise to the diseased excrescence from maples and similar trees. So many theories have been stated as to the apples of Sodom that conjectures would now be superfluous. Among

<sup>a</sup> See p. cxxx.

<sup>b</sup> *Gesta per Reg. Franc. An. 1100.*

<sup>c</sup> "In the woods (near Thyatira) we picked up a fruit answering in some respects to the description. It grows on short bushes, and is enclosed in a green shell like that of a horse chestnut, which it resembles in shape, size, and colour; it has thorns on its surface, and when cut open, the inside looks like mould." Vol. ii. 121. As we have no doubt that his "acute Arab" intended to describe the same fruit which was noticed by Fulk and Father Daniel, Elliot must have understood him very imperfectly to suppose that the account was applicable to the fruit he had seen near *Thyatira*. That his mind was preoccupied by his previous conjecture, accounts for this.

the various fruits which have been so miscalled, is one that grows in great abundance on low bushes in the vicinity of Elisha's fountain at Jericho. It is of a yellow colour, beautiful to the eye, but exceedingly unpalatable, and reputed to be poisonous. The appearance of the interior does not, however, correspond to that of the fruit in question. That which does so, more than any known vegetable, is the *solanum melongena*, or mad-apple:<sup>a</sup> when this is attacked by a certain insect, the skin is pierced with a hole scarcely perceptible, and remains apparently perfect, and of a beautiful colour, while the inside is converted into a powder like dust."<sup>b</sup>

Burckhardt states that the Arabs speak of a spurious pomegranate-tree, producing a fruit exactly like that of the pomegranate, but which, on being opened, is found to contain nothing but a dusty powder. He adds, however, that other persons deny its existence.<sup>c</sup> By some process or other his mind is led from this to the Asheyr-tree,<sup>d</sup> which he proceeds to describe. He says it is very common in the Ghor. It bears a fruit of a reddish yellow colour, about three inches in diameter, which contains a white substance resembling the finest silk, and enveloping some seeds. The Arabs collect this "silk," and twist it into matches for their firelocks, preferring it to the common match, because it ignites more readily. More than twenty camels' loads might be annually procured, and it might perhaps be found useful in the silk and cotton manufactures of Europe. At present the greater part of the fruit rots on the trees. On making an incision into the thick branches of the *asheyr*, a white juice exudes, which is collected by putting a hollow reed into the incision. The Arabs sell this juice to the druggists at Jerusalem, who are said to use it in medicine as a strong cathartic. This is the same tree which is mentioned (in the same locality) by Captain Mangles under the name of *oshar*. The connection in which Burckhardt describes it is rendered remarkable only by the fact that Seetzen, on hearing the same account, in the same place, of the spurious pomegranate, was led to conclude that this very *asheyr*-tree was really intended. His words are: "While I was at Kerek, at a house of the Greek curate of the town, I saw a sort of cotton resembling silk, which he used for tinder for his matchlock. He told me that it grew in the plains of El Ghor, to the east of the Dead Sea, on a tree like the fig-tree, called *aaeschaer*.<sup>e</sup> The cotton is contained in a fruit resembling the pomegranate: and by making incisions at the root of the tree,<sup>f</sup> a sort of milk is procured which is recommended to barren women, and is called *lébban aaéschaer*. It has struck me that these fruits, being, as they are, without pulp, and which are unknown throughout the rest of Palestine, might be the famous apples of Sodom. I suppose likewise that the tree which produces it is a sort of fromager (*Bombax*, Linn.), which can only flourish under the excessive heat of the Dead Sea, and in no other district of Palestine."<sup>g</sup>

PLANTS.—We have already intimated that Dr. Clarke is the great traveller of this month. He was well versed in botany, and has consequently noticed a large number of plants, many of which he knew to be nondescripts. As he is almost our sole remaining companion for this

<sup>a</sup> That is a matter of opinion. It seems however to have been also the opinion of Hasselquist. See before p. colxxxii.

<sup>b</sup> Elliot, ii. 486.

<sup>c</sup> 'Syria,' 392.

<sup>d</sup> It is the same plant called *oshour* by the people of Upper Egypt and Nubia. Haden, who gives a drawing of it as found by him near the first cataract of the Nile, improperly denominates it *oshar*.

<sup>e</sup> Same as *asheyr*.—*Aaeschaer*—*asheyr*—*oshar*—*oshour*:—What differences in spelling the same Arabic word!

<sup>f</sup> Burckhardt derives it from the "thick branches."

<sup>g</sup> Seetzen, p. 46. The editor or translator has a note to this, which is well worth transcribing. He says it is "a species of *asclepias*, probably *gigantea* [it is *A. procera*]. The remark of Mr. Seetzen is corroborated by a traveller [Sonnini, of course], who passed a long time in situations where this plant is very abundant. The same idea occurred to him when he first saw it in 1792. Although he did not then know that it existed near the Lake Asphaltites. The umbella, somewhat like a bladder, containing from half a pint to a pint, is of the same colour with the leaves, a bright green, and may be mistaken for an inviting fruit without much stretch of imagination. That, as well as the other parts, when green, being cut or pressed, yields a milky juice, of a very acid taste. But in winter it contains a yellowish dust, in appearance resembling certain fungi, common in South Britain, but of pungent quality, and said to be particularly injurious to the eyes. The whole so nearly corresponds with the description given by Solinus (Polyhistor), Josephus, and others of the Poma Sodomae, allowance being made for their extravagant exaggerations, as to leave little doubt on the subject.

"The same plant is to be seen on the sandy borders of the Nile, above the first cataracts. It is about three feet (only?) in height, the fruit exactly answering the above description, &c. The downy substance found within is of too short staple, probably for any manufacture, for which its delicate silky texture and clear whiteness might otherwise be suitable."

month, it may be most pleasant to go unreservedly with him, reporting, with such remarks as may occur to us, the observations made by him in the successive steps of his progress. In May we did this for Hasselquist.

Dr. Clarke landed at Acre on the 29th of June, and remained there until the 3rd of July, when he left for Nazareth. Approaching the hills which bound the plain, "the land was much covered with a plant exhibiting large blossoms of aggregated white flowers, resembling those of the wild-parsley." He believed it to be the *cachrys libanotis*. Of all the plants noticed in the journey, this is the only one the Doctor neglected to add to his *herbarium*, from an absurd notion that what appeared so common might be had anywhere and at any time. But it disappeared when the distance from the sea had much increased. The Indian fig<sup>a</sup> has already been noticed in this work; but we may add Clarke's statement, that it grows to a prodigious size in the Holy Land, as in Egypt, where it is used as a fence for the hedges of enclosures. It sprouted luxuriantly among the rocks, displaying its gaudy yellow blossoms amidst thorns, defying all human approach. He afterwards saw this plant *as thick as the mainmast of a frigate*. It produces a delicious cooling fruit, which becomes ripe towards the end of July, and is then sold in all the markets of the country.

Between Sepphoris and Nazareth the journey led over a hilly and stony tract of land, having no resemblance to the deep and rich soil which had before been passed. Hasselquist regarded it as a continuation of the species of territory which is peculiar to the same meridian through several countries. He found here the same plants which he had seen in Judea; and these, he says, are not common elsewhere. Notice was also taken of the *Psoralea Palæstina* of Linnæus, and of a new species of pink, to which, from the interesting circumstances of its locality, the name of *Dianthus Nazareus* (Nazarene Pink) was given. In this journey, between Acre and Nazareth, three *new* species of plants were discovered by an accomplished traveller, and are described in the note below.<sup>b</sup>

The plants near the town of Nazareth were found to be all withered under the heat and drought of summer. Only four were found, of which tolerable specimens could be selected. These were the new species of *Dianthus*, or pink, just mentioned; the Syrian Pink, or *Dianthus Monadelphus*; the *Ammi Copticum*; and the *Anethum graveoleus*: these the traveller carefully placed in his herbarium, as memorials of the interesting spot in which they were collected.

Travelling from Nazareth to Tiberias, Dr. Clarke found occasion to notice the thistles, as quoted in a former page; and a plant, which he mistook for the Jerusalem artichoke, was also seen everywhere, with a purple head, rising to the height of five or six feet. "The scorching rays of the sun," continues the traveller, "put it out of our power to collect specimens of all these; no one of the party having sufficient resolution to descend from his horse and abandon his umbrella, even for an instant. *We distinctly perceived that several of these plants had not been described by any traveller.*"

"In the examination of the scanty but interesting selection which, with excessive fatigue and difficulty, we made in this route, not less than six new species were discovered.<sup>c</sup> Of these, the new globe-thistle, which we have named *Echinops grandiflora*, made a most superb

<sup>a</sup> *Cactus Ficus Indicus*.

<sup>b</sup> 1. A nondescript species of *Wild Bugloss* (*Lycopsis*, Linn.) with lanceolate blunt leaves, from two to three inches in length, and the flowers sessile, pointing to one side, in curved close racemes at the ends of the branches; the bracts linear larger than the blossoms, and as well as every part of the plant except the blossoms and roots, hispid, with strong pungent bristles. Named by the discoverer of it *Lycopsis confertiflora*.

2. The new pink, mentioned above, with slender stems, a foot or more in height, and very narrow three-nerved leaves about an inch and a half long, the flowers solitary, embraced at the base by six ovate sharp-pointed bracts, the petals unequally six-toothed at the end. Named, *Dianthus Nazareus*.

3. A curious nondescript species of *Stone Crop* (*Sedum*, Linn.), with lanceolate fleshy leaves, the flowering stems nearly erect, from about fourteen to eighteen inches or more in height, and often leafless. The flowers yellow, in a sort of umbel, composed of close, unequal racemes; the petals six, lanceolate and acute, with the same number of capules and twelve stamens. This was named *Sedum altum*.

<sup>c</sup> These are:—1. A new species of Heliotrope, found near Cana, to which the name of *Heliotropium hirsutum* was given. 2. A nondescript species of Larkspur, found near the same place, and named *Delphinium incanum*. 3. A cottony species of Origanum, also near Cana, which received the name *Origanum vestitum*. 4. A shrubby nondescript species of Globe Thistle, named *Echinops grandiflora*. 5. A nondescript species of Aria, denominated *Aria triaristata*. 6. A nondescript shrubby species of *Cistus*, on which the names of *Cistus oligophyllus* was bestowed.

appearance. It grew to such a size, that some of its blossoms were near three inches in diameter, forming a sphere, equal in bulk to the largest fruit of the pomegranate. Its leaves and stem, while living, exhibited a dark but vivid sky-blue colour. The Persian manna plant, or *Hedysarum alhagi*, which we had collected between Acre and Nazareth, also flourished here abundantly. This thorny vegetable is said to be<sup>a</sup> the favourite food of the camel. It is found wild in Syria, Palestine, Persia, Egypt, Mesopotamia, Armenia, Georgia, and in the islands of Tenos, Syra, and Cyprus. Rauwolff, who discovered it in 1537, in the vicinity of Aleppo and in Persia, often mentions it in his 'Travels.'"

Approaching nearer to the Lake Tiberias, not only the *thistles* but the "tall herbage" again attracted the notice of our traveller. Descending to the town over the slopes cultivated by the inhabitants, some plantations of tobacco were observed, being at this time in bloom; also of Indian corn, and of millet, which was still green.

From Tiberias the traveller proceeded in the direction of Nablous, the ancient Shechem, and from thence to Jerusalem. On this latter portion of his journey he remarks:—"The road was mountainous, rocky, and full of loose stones; yet the cultivation was everywhere marvellous: it afforded one of the most striking pictures of human industry which it is possible to behold. The limestone rocks and stony valleys of Judea were entirely covered with plantations of figs, vines, and olive-trees; not a single spot seemed to be neglected. The hills, from their bases to their upmost summits were even spread with gardens, all of which were free from weeds, and in the highest state of cultivation. Even the sides of the most barren mountains had been rendered fertile by being divided into terraces,<sup>b</sup> like steps, rising one above the other, upon which soil had been accumulated with astonishing labour. Among the standing crops we noticed *millet*, *cotton*, *linseed*, and *tobacco*, and occasionally small fields of *barley*. A sight of this territory can alone convey an idea of its surprising produce. It is truly the Eden of the East, rejoicing in the abundance of its wealth. Under a wise and beneficent government, the produce of the Holy Land would exceed all calculation. Its perennial harvest,—the salubrity of its air,—its limpid springs,—its rivers, lakes, and matchless plains,—all these, added to the serenity of its climate, prove this land to be indeed 'a field which the Lord hath blessed.'<sup>c</sup> God hath given it the dew of heaven and the fatness of the earth, and plenty of corn and wine.'"

At Jerusalem Dr. Clarke appears to have been too much engaged in local criticisms and descriptions—in upsetting old traditions and setting up new theories—to heed the plants which its neighbourhood offers. Travelling from it on the road to Rama and Jaffa, he observes that the hills were for the most part barren, but the valleys remarkably fertile. The latter (it was now the middle of July) were covered with crops of *tobacco*, *wheat*, *barley*, Indian millet, melons, vines, pumpkins, and cucumbers. "The gourd or pumpkin," he notes, "seems to be a favourite vegetable in the East, and many varieties of it are cultivated."

At Jaffa, notwithstanding the then desolate appearance of the town, the market surprised the traveller by the beauty and variety of the vegetables it exhibited. In accordance with what we have lately stated, he remarks:—"Melons of every sort and quality were sold in such numbers, that boats from all the coast of Syria came to be freighted with them. Among these the water-melons were in such perfection, that after tasting them at Jaffa, those of any other country do not seem like the same fruit."

In this neighbourhood were found four undescribed plants, with several others that were rare, especially the *Anabasis spinosissima* of Willdenow. The new species were:—A nondescript species of *Plantago*, to which the name of *P. setosa* was given; a very small nondescript prostrate species of St. John's Wort, which received the name of *Hypericum tenellum*; a minute, nearly stemless umbelliferous plant, which was added to the genus *Bupleurum* by the name of *B. minimum*; and a small downy annual species of Scabious, which was named *Scabiosa divaricata*.

**IRRIGATION.** The drought of the season to which we are now advanced calls into operation all the modes of artificial irrigation which the country possesses, and of which we now proceed

<sup>a</sup> It is so.

<sup>b</sup> See the cut at the head of this chapter.

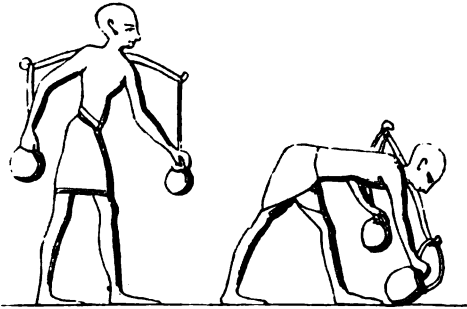
<sup>c</sup> Gen. xxvii. 27, 28.



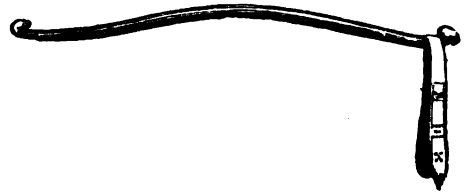
to take some notice. All the pictorial illustrations of the subject which we have to offer are derived from ancient and modern Egypt; but the practices are the same which prevail throughout Syria and Western Asia, and indeed the same which have been in use from ancient times. These have been so selected as to convey of themselves most of the information required, and are designed rather to supply (more efficiently) the place of written description, than to form the text for a written commentary. The very great importance of the subject in a country where rain is discontinued throughout the summer, and where, in consequence of that and of the fervent heat, all the streams are quite dried up, excepting those of two or three principal rivers, are circumstances not only to justify but to require the extent of illustration which we are prepared to afford.

The water is to be raised from rivers (say the Jordan), from reservoirs (of which there are many of much importance in Palestine), or from wells, and to be distributed over the fields and gardens; and we are to show how it is raised and distributed.

The first and most obvious process, where the water was near at hand, as in a reservoir upon the grounds, was to employ men to water the beds with pails or pots. This appears to have been done to a considerable extent in ancient Egypt, in the manner shown in the annexed cut. The yoke by which they bear the water-pots from their shoulders was very extensively



[Irrigation with Pails.]



[Yoke and Strap.]

employed in carrying burdens; and being much mentioned in the Scriptures, a more complete representation of it may be acceptable to our readers.

When the river is high, or the bank low, two men are often employed to raise water by

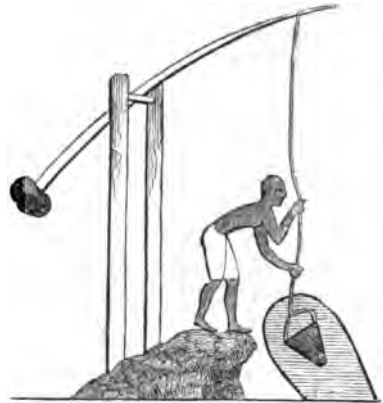


[Irrigation by the Ckutweh.]

their united action, in a single vessel, (called *skutweh*) after a manner which is too distinctly shown in the preceding engraving to require explanation. When the grounds are so situated as to make a resort to this method expedient, a kind of trench, as shown in the cut, is formed in the bank, which serves as a reservoir, on the opposite sides of which the men necessarily stand, to raise the water between them. The same process is applicable to any reservoir.

It is however in such cases more usual to raise the bucket by means of the *shadoof*, which is the most common and simple of the machines used in the East for raising water, whether from rivers or from wells. To use the accurate description of Mr. Lane,<sup>a</sup> "It consists of two posts or pillars of wood, or of mud and canes or rushes, about five feet in height, and less than three feet apart, with a horizontal piece of wood extending from top to top, to which is suspended a slender lever, formed of a branch of a tree, having at one end a weight chiefly composed of mud, and at the other, suspended from two long palm-sticks, a vessel in the form of a bowl, made of basket-work, or of a hoop and piece of woollen stuff or leather; with this vessel the water is thrown up to the height of about eight feet, into a trough hollowed out for its reception." That this mode of raising water is very ancient is evinced by the engraving here annexed.

The difference between it and that of which we have quoted the description is, chiefly, that the lever is not suspended from, but *balanced upon* the cross beam. And this more ancient mode is preserved in Syria, and indeed in most other countries (except Egypt) where the principle of the balance and lever is applied to the raising of water. This principle is very extensively employed in eastern Europe and Western Asia to the raising of water *from wells*. It prevails from one end of Russia to the other, as also in Asia Minor, parts of Persia and Syria. In the latter country the *shadoof* is *now* less frequent than in other parts of Western Asia; but where it is found (as in the neighbourhood of Jaffa, etc.<sup>b</sup>), the lever is *balanced*, not *suspended*. It will be apparent



[Ancient Shadoof.]

to one who has the slightest acquaintance with mechanics that the principle labour of the man who attends to the *shadoof* is not to *raise* the bucket, but to *lower* it into the well or river. We have ourselves tried it often, and found that it required a strenuous muscular exertion to lower the bucket; and when it is full, the chief care is to prevent its rising too high and with too much force.

When the river is too low or its banks too high for *shadoofs* on the same level to raise the water to the surface of the soil, a series of four or five *shadoofs* or sets of shadows is rendered necessary. The water is then raised from the river by *shadoofs*, and discharged into a trench, from which it is taken by other *shadoofs*, and discharged into another trench above, and so on from trench to trench, until it is raised to the level of the fields. (See cut, p. ccxcvi.)

Instead of being balanced upon or suspended from a cross beam between two pillars, we have very frequently noticed the lever balanced upon the top of one stout beam planted perpendicularly, and which is usually forked or hollowed at the upper end for this purpose. It is thus arranged also in those parts of Syria where the *shadoof* is at all used, as in the gardens around Jaffa, where it is employed in drawing water from the wells.<sup>c</sup>

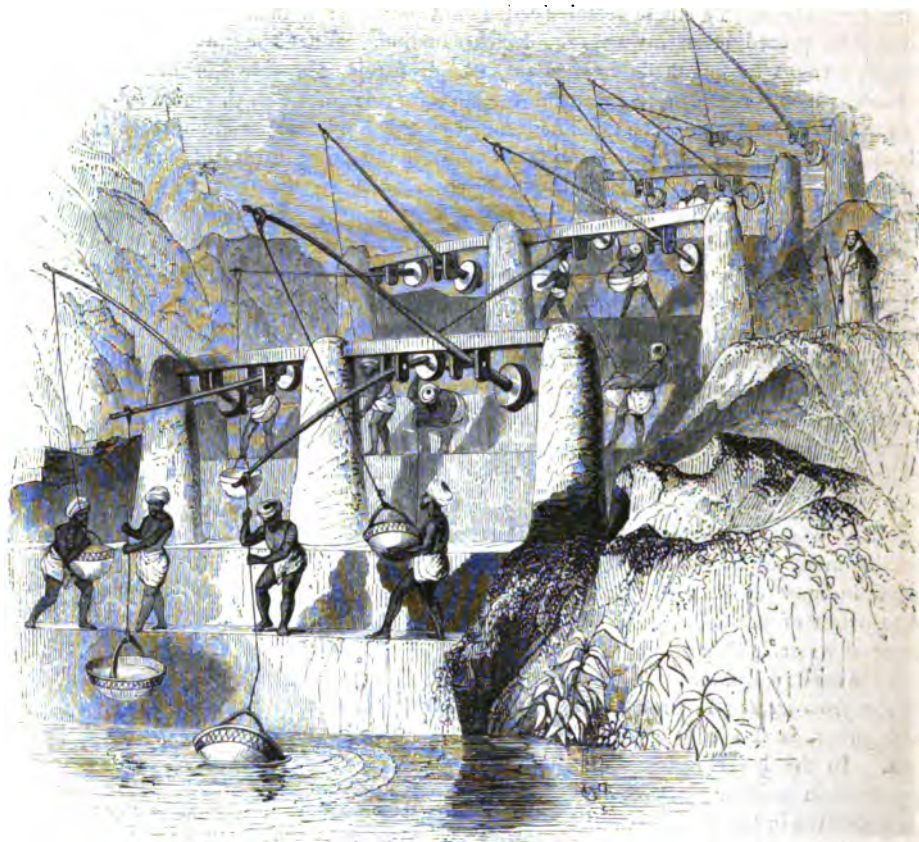
Mr. Lane writes of *shadoofs* with two levers, etc., which are worked by two men; but concerning which we possess no further information.

Another machine, much used for the same purpose as the *shadoof*, not only on the banks of the Nile, but on those of the Euphrates, Tigris, and all the principal rivers of Western Asia, is the *Sackiyeh*, and which is usually in all places called "the Persian wheel," indicating its derivation from Persia, where, certainly, it is now very largely employed. It is by far the principal machine employed for the irrigation of gardens in all the quarters we have named.

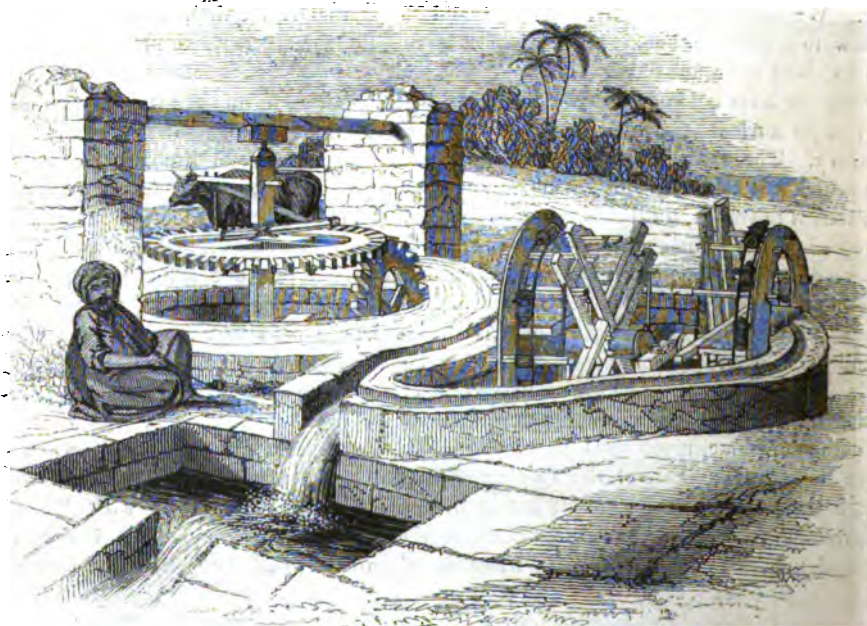
<sup>a</sup> 'Modern Egyptians,' vol. ii. p. 24.

<sup>b</sup> See Turner, ii. 293.

<sup>c</sup> See the cut and statement in Turner's 'Tour in the Levant,' ii. 293.

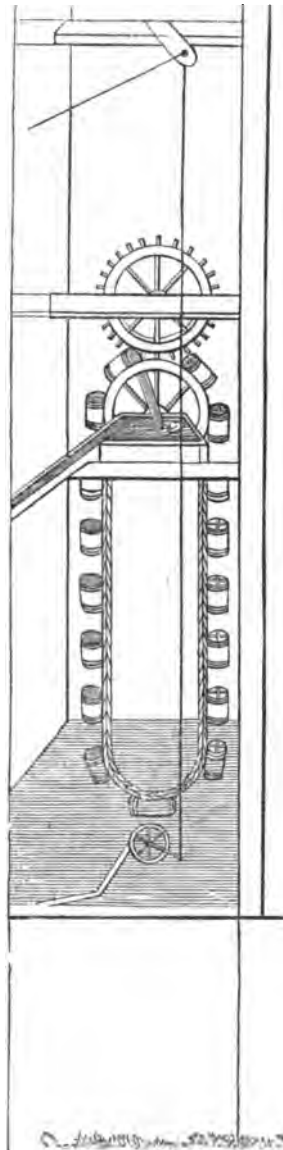


[Modern Shadoofs.]



[The Sackiyeh, or Persian Wheel.]

The most concise and yet clear description is, again, Mr. Lane's, which we therefore adopt, referring those who desire more minute information to tome xii. of the 'Descriptions de l'Egypte,' which contains an account of *all* the processes of irrigation employed in that country. The Sackiyeh "mainly consists of a vertical wheel, which raises the water in earthen pots attached to cords, and forming a continuous series; a second vertical wheel fixed to the same axis with cogs; and a large horizontal cogged wheel, which, being turned by a pair of cows or bulls, or by a single beast, puts in motion the two former wheels and the pots. The construction of the machine is of a very rude kind; and its motion produces a disagreeable croaking noise." The example exhibited in our cut is one of the most perfect of the kind, being used for the irrigation of the gardens of one of the old beys, on the banks of the canal by which Cairo is traversed. The reader will perceive that the revolution of the wheels takes down the string of buckets on one side, and brings them up full on the other. On reaching the top, they are reverted by the continued action of the wheel, and pour forth their contents into a trough which conducts it to a reservoir, whence it is distributed in rills over the garden. The annexed engraving will render more clear the mode in which the string of buckets acts in raising the water, although it does not belong to the interior construction of the same machine which is represented in the preceding engraving, but is derived from another application of the same principle. It is by the wheel and string of buckets that water is usually raised *from wells* in Syria, although the shadoof is sometimes employed. There is another machine used for the irrigation of lands, when it is only necessary to raise the water a few feet. This is called the *Taboot*. "It somewhat resembles the Sackiyeh; the chief difference being, that, instead of the wheel with pots, it has a large wheel with hollow jaunts, or fellies, in which the water is raised."<sup>a</sup> Sometimes men are employed with the *Khutweh*, as represented in the first of this set of illustrations, to raise the water to the channel of the *Taboot*. (See the first engraving in the following page.)

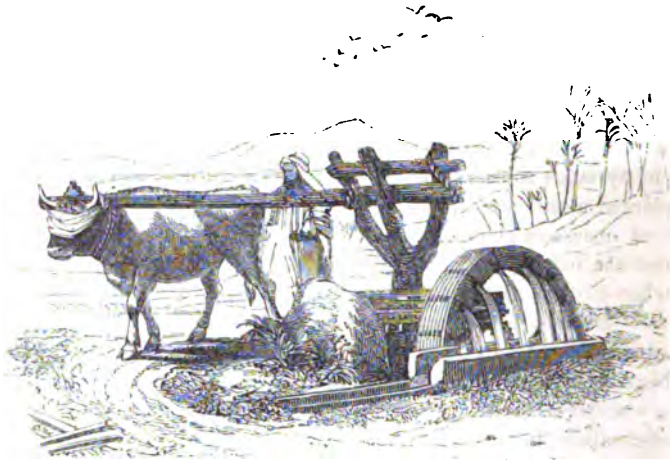


[String of Buckets.]

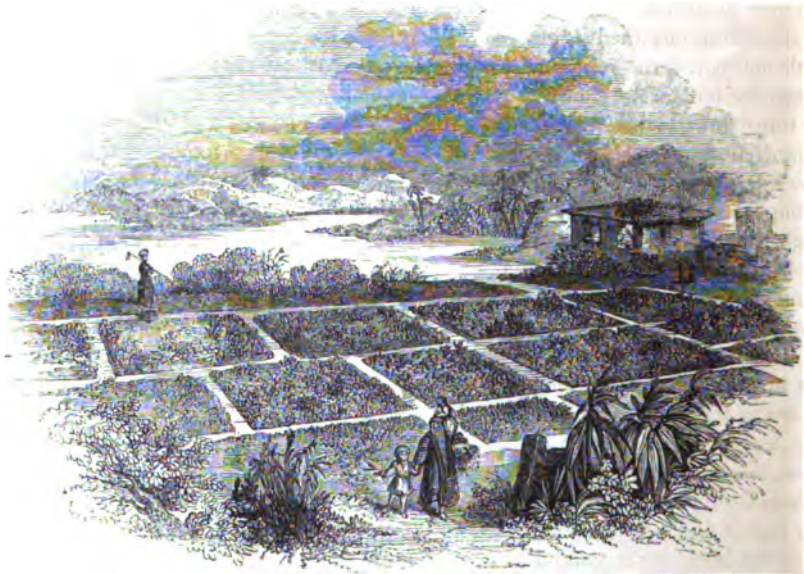
The water being raised to the surface by these various methods, is distributed over the grounds in the manner shown in the second engraving in the following page. Grounds requiring to be artificially watered are divided into small squares by ridges of earth or by furrows: and the water, flowing from the machine or cistern into a narrow gutter, is admitted into one square or furrow after another by the gardener, who is always ready as occasion requires, to stop and divert the torrent, by turning the earth against it with his foot, and opening at the same time with his mattock a new trench to receive it. This mode of distributing water over a land rarely refreshed with rain, is more than once alluded to in the Scriptures; and indeed a distinction is founded upon it between Egypt and the Land of Canaan;<sup>b</sup> showing that the latter was *naturally* so much better watered through rains than the former, that this elaborate

<sup>a</sup> Lane, ii. 25.

<sup>b</sup> "The land whither thou goest in to possess it, is not in the land of Egypt, from whence ye came out, where thou sowest thy seed, and waterest it with thy foot, as a garden of herbs: but the land, whither ye go to possess, is a land of hills and valleys, and drinketh water of the rain of heaven."—Deut. xi. 10, 11.



[The Taboot.]



[A Watered Garden.]

mode of artificial irrigation would there not be required, as in Egypt, for arable lands, but only for gardens. This process is indeed followed for the irrigation of gardens in Syria; and rice, which requires much water, is only sown in quarters where this mode of irrigation is practicable, as in the valley or hollow which contains the Lake Houle; the valley of Baalbec; and the vicinity of Damascus.

After having said so much respecting the irrigation of gardens, some information respecting the gardens themselves will be acceptable to the reader.

After such large notice of the beauty and odour of the flowering plants and shrubs of the country, the reader may be apt to imagine that the gardens must be the finest in the world. This is very far from being the case. On the contrary, to copy a sensible remark of Chardin, when speaking of Persian gardens, "it will be found a very general rule that, where Nature is easy and abundant in her productions, the art of gardening is in a low state, and

almost unknown. The reason appears to be, that where Nature herself acts the part of the gardener so excellently (if the expression may be allowed), there seems little left for art to do."\* And this is said with particular reference to a country which was of old famous for its "paradises," and in which gardens still receive more than the average attention paid to them in Western Asia. It is even more applicable to Syria, although the characteristics of a good garden are the same there as in Persia.

The gardens in Syria are separated from each other by low walls of stone or mud. As they are in general planted more with a view to profit than to pleasure, very little labour is applied to the removal of unsightly deformities, in levelling or sloping the ground, or in any other improvement unconnected with lucrative cultivation. The gardens are a compound of the orchard, the kitchen-garden, and the flower-garden, blended without the intervention of grass-plats or parterres. Even in the best gardens—those of grandees and princes—such things as terraces and wildernesses, and even parterres do not exist, and greenhouses and conservatories are unknown things. The whole extent is divided into square or oblong fields, irregularly bordered with dwarf-trees, flowering shrubs, and trees of longer growth, among which the plane, the weeping-willow, the ash, and the white poplar, make a conspicuous figure. Within some of these enclosures are cultivated mad-apples, melons, and cucumbers, together with a variety of esculent roots, green, and legumes for the kitchen; in others, tobacco, sesamum, palma Christi, and lucern; and some are even sown with barley, to be cut green for the use of the horses in spring.

Interspersed among the enclosures are large plantations of the pomegranate, the plum, the peach, the apricot, the apple, the pear, the quince, the olive, the walnut, the hazle-nut, the fig, the orange, the lemon, the lime, and other fruit-trees; and sometimes groves composed of the various fruit-trees that the country produces. All these trees are standards; and although sometimes planted in rows, they are for the most part crowded close together, with little regard to symmetry; forming wild and almost impervious thickets. But in other parts of the grounds more complete shades are often formed by clumps of forest-trees, which, uniting their branches at top, give shelter to roses of different sorts, and to a profusion of wild aromatic herbs, which, thus protected from the sun, long retain their fragrance. Among these loftier trees are the sycamore, the plane, the white and black poplar, the plantain, the cypress, the birch, the box, and others which have been named in the course of this survey. The flowers (which are often only cultivated by those who have gardens for sale to those who have none) contribute but little to the beauty of these gardens, being neither regularly displayed in parterres nor dispersed with any art among the plantations. When the grounds happen to be well shaded, and require less watering, several of the diverging rills being made to unite, escape in a swifter current through the shade, and the swollen brook is discovered at intervals amidst the foliage, or, when concealed from sight, is traced by the pleasing murmurs which it makes.

Little care is taken to prune luxuriant trees, or to keep in order the garden-walks. There is usually one broad walk surrounding the whole garden, and another, still broader, running through the middle; but the rest of the grounds are traversed by narrow and intricate paths.

In the gardens of *Persia* an oblong basin of water usually occupies the centre of the garden, of a size proportioned to it. In Syria these are more generally than in Persia confined to the small gardens attached to, or rather contained within, the enclosure of inhabited houses.

Much of the difference between the gardens of Europe and those of Western Asia arise probably from the fact that the Orientals *do not walk in their gardens*, and, indeed, have not the least idea of walking for pleasure. The owner, with some friends (seldom by himself), goes to his garden, and sits down in some pleasant and shady place, and there remains. Most commonly there is a small open structure (often with some pretensions to elegance), or summer-house, called a *kiosk*, in which the whole time is spent. They think it enough—and perhaps it is so in those genial climes—to sit enjoying the cool shade and the fragrancy of the freshening breeze; while more than the eye is satisfied by the verdure of the groves, the

\* 'Voyages de Chardin,' iii. 362.

glistening of the redundant blossoms, and the golden luxuriousness of the ripening fruits; and the ear is insensibly soled by the murmuring of the rills, and the melodies of the nightingale. Such are the enjoyments the Orientals seek in their gardens, and which their gardens are calculated to afford. To us they have ever seemed keen but quiet admirers and enjoyers of nature;—more alive, indeed, to the beautiful than to the grand—and, from habit and feeling, more inclined to enjoy the things they find, and as they find them, than to bestow much cost or labour in opening new sources of enjoyment for themselves. The great principle of difference between us and them has been incidentally evolved, and is capable of more extensive applications than we have made of it. We walk, and they sit.

The time was when much attention appears to have been paid to gardening as an art, both in Western Asia and in Egypt. In the Scriptures there are many interesting allusions to gardens and gardening; and king Solomon in particular appears to have bestowed much



[Part of an Ancient Egyptian Garden.]

attention on the matter. The Persian "paradises" were famous over the world; and who has not heard of "the hanging gardens" of Media and Babylon? Even so late as the time of Pliny, the Syrians were excellent gardeners, and their skill in laying out grounds became a proverb among the Greeks.<sup>a</sup> And with respect to the Egyptians, their nicety in gardening far exceeded all we should have supposed, but for the evidence we have lately obtained from the plans of gardens which have been found painted on the walls of the tombs. Here is a piece

from one of these representations, which, as the reader will perceive, "is much more a painted ground-plan than a picture,—a kind of combination of the ground-plan and the bird's-eye view, and yet neither the one nor the other."<sup>b</sup>

Many of the gardens thus represented must have been of great extent; and judging from them, as the author of the work last cited remarks, Egyptian gardens must have been planted with all the stiffness and formality of an old Dutch garden. As from this source we may obtain some of the most definite information we possess respecting the gardens of early times, while some of the usages of the ancient Hebrews are illustrated by it, we cannot abstain from a further statement on this subject, drawn from Sir J. G. Wilkinson's 'Ancient Egyptians.'

The large gardens were usually divided into different parts, the principal sections being appropriated to the date and sycamore-trees and to the vineyard. The former might be looked upon as the orchard; but similar enclosures being also allotted to other trees, they equally lay claim to this name; we cannot therefore apply a fixed appellation to any part but the vineyard itself.

Gardens are frequently represented in the tombs of Thebes and other parts of Egypt, many of which are remarkable for their extent. The most important of them is shown to have been surrounded by an embattled wall, with a canal of water passing in front of it, connected with the river. Between the canal and the wall, and parallel to them both, was a shady avenue of various trees, and about the centre was the entrance, through a lofty door, whose lintel and impost were decorated with hieroglyphic inscriptions, containing the name of the

<sup>a</sup> 'Nat. Hist.' lib. xx. cap. 5.

<sup>b</sup> 'Egyptian Antiquities,' ii. 74, in the 'Library of Entertaining Knowledge.'

owner of the grounds, who, in this instance, was the king himself. In the gateway were rooms for the porter, and other persons employed about the garden, and probably the receiving room for visitors, whose abrupt admission might be unwelcome; and at the back a gate opened into the vineyard. The vines were trained on a trellis-work, supported by transverse rafters resting on pillars, and a wall, extending round it, separated this part from the rest of the garden. At the upper end were suites of rooms, on three different stories, and the windows looking upon green trees, and inviting a draught of air, made it a pleasant retirement in the heat of summer. On the outside of the vineyard wall were planted rows of palm-trees, which occurred again with the *doums*. Along the whole length of the exterior wall four tanks of water, bordered by a grass-plot, where geese were kept, and the delicate flower of the lotus was encouraged to grow, served for the irrigation of the grounds, and small *kiosks* or summer-houses, shaded with trees, stood near the water, and overlooked the beds of flowers. The spaces containing the tanks, and the adjoining portions of the garden, were each enclosed by their respective separate walls, and a small subdivision on either side between the large and small tanks seems to have been reserved for the growth of particular trees, which either required peculiar care, or bore a fruit of superior quality. In all cases, whether the orchard stood apart from, or united with, the rest of the garden, it was supplied, like the other portions of it, with abundance of water, preserved in spacious reservoirs; on either side of which stood a row of palms, or an avenue of shady sycamores. Sometimes the orchard and vineyard were not separated by any walls, and figs and other trees were planted within the same limits as the vines.<sup>a</sup> But if not connected with it, the vineyard was close to the orchard.



[Egyptian Tank with Trees]

## AUGUST.

**WEATHER.**—The weather for the greater part of this month continues much like that of the two preceding. But after the 20th, a number of clouds usually pass, larger and more dense than those seen transiently in the summer months, and are by the Europeans called “the Nile clouds.”<sup>b</sup> From this time dews, which are hardly ever observed in summer, begin to fall in the night, but are not yet considerable. The greatest height of temperature indicated (at Aleppo) by the thermometer is ninety-seven degrees, the least seventy-four degrees; and the greatest difference in any one day is ten degrees. The morning station of the mercury before the appearance of the Nile clouds is much the same as in July; but as soon as these appear, it falls four or five degrees. The difference in the afternoon observations throughout the month is about eight or ten degrees.

**TREES AND SHRUBS.**—August brings in the great season of fruit: most of the fruits which had ripened in the preceding months continue to afford ripe fruits still; while most of those which had not previously ripened now perfect their fruits. The fruit trade is now therefore carried on with considerable vigour both by land and water. In the interior most of the

<sup>a</sup> See Luke xiii. 6, “A certain man had a fig-tree planted in his vineyard;” and 1 Kings iv. 25, “Every man under his vine and under his fig-tree.”

<sup>b</sup> “First, about the end of June, there was observed a chain of clouds, to be attributed, no doubt, to the overflowing of Egypt by the Nile (which, by the way, causes a current along the whole coast of Syria), and which, in fact, proceeded from that quarter, and were passing to the north-east. After this first irruption, towards the end of July, and in August, there was a second season of clouds. Every day towards eleven o’clock, or about noon, the sky was overcast. The sun was often invisible the whole afternoon. The *Sarais* or summit of Lebanon was capped with clouds, and many of them ascending the declivities, remained among the vineyards and the pines; and I was frequently so enveloped in a humid, warm, and opaque mist, as not to be able to see four paces before me. About ten or eleven at night the sky grew clear, the stars appeared, and the remainder of the night was very fine; the sun rose shining, and towards noon the like appearances returned in the same circle.”—Volney, i. 321. These clouds do not cause rain; but this traveller supposes that they occasion the dews which begin to fall at the season of their appearance.



towns obtain from their orchards sufficient for their own wants. The two great market gardens of southern Syria are the neighbourhood of Jaffa, on the one hand, and Damascus on the other. From the former vast quantities are carried along the coast to Beirut, Tripoli, and other towns; and considerable quantities come to the same quarter, across the mountains, from Damascus. That fertile city does not of course send fruits which can be more easily obtained from the plains of Sharon. Apricots, plums, and pears, are the chief. All, from both quarters, is sold for what we should consider a mere trifle. Some notice has been already taken of the plums of Damascus. Mr. Paxton<sup>a</sup> mentions them with great admiration. He declares them the finest he ever saw in any place, and describes them as being nearly as large as a hen's egg, and has a fine rich pulp. "It is of a deep red colour, and does credit to the land where it grows."

We shall not again mention the fruits noticed in preceding months, even though they continue in season, unless there are some new developments to report.

The ripening of the *Olive* in this month affords us occasion to notice a tree which figures



[Olive Tree. *Olea Europea*.]

perhaps more conspicuously than any other in the Scriptures. How abundantly this valuable tree was enjoyed in Palestine, and how rich it consequently was in the valuable oil which it affords, recurs constantly as an historical fact throughout the Hebrew annals. From the consciousness of the benefits it confers, there have been few trees so highly honoured by man as this. One of the earliest and most striking facts in the history of our race makes the olive-tree a symbol of peace to man;<sup>b</sup> and such it has ever since continued in every country

where it is found, and even (symbolically) in countries where it is not found; and wherever it exists, it has been regarded as a peculiar and distinguished gift of God to man. This arises, not only, or so much, from the excellent qualities of its fruit as from the superior properties of its oil, and the unusual abundance with which it is furnished. This greater abundance, as well perhaps as some of the qualities peculiar to it, arise from the circumstance that in the olive it is the pericarp, and not (as in most other plants) the nut or seed, from which the oil is obtained.

The olive rarely becomes a large tree; but two or three stems frequently rise from the same root, from twenty to thirty feet high, putting out branches almost their whole length, covered with a gray bark. The leaves, which are about two inches and a half long, and not more than half an inch wide in the middle, are, as in its congener the ash, of a lively green on their upper side, and hoary under, and stand opposite to each other. The flowers, which are produced in small axillary branches, are small and white. The fruit is of a yellowish green, turning towards black as it ripens; the form and size of this fruit, as well as the qualities of its flesh, and the hard bony kernel which it contains, are too well known in this country to require particular notice. Its manner of growth and other details are best shown in the following engraving.

The tree likes a warm soil and exposure to the sun; and although not properly a maritime

<sup>a</sup> Letters, p. 38.

<sup>b</sup> Gen. viii. 11.

plant, as the ancients supposed, it endures the spray of the sea better than many other trees which are found in the interior. It grows in *all* parts of Palestine, on *both* sides the Jordan, in Galilee, in Samaria, in Judea, and all along the coast. The notices of travellers give to the olive-tree the same prominence in Palestine which is given to it by the Scriptures. Before commencing this present chapter, we formed, for our own use, a collection of references to all the notices of plants in the different travellers enumerated in the first chapter. In this we find the different notices of the presence of the olive exceed one hundred and fifty, and are more numerous by far than to any other tree or plant. The references to vines, fig-trees, mulberries, and oaks, rank next in frequency; the references to *none* of these are more than half as numerous as those to the olive-tree. Olives and figs are with great frequency mentioned together. And if the olive be so frequent and so abundant now, in the comparative desolation of the country, which was once "full of people," how much more must it have been when the energies of a teeming population devoted to agriculture, were directed to the care and culture of the olive as a primary object of attention!



[Olive branch with Fruit.]

1, A flower; 2, an ovary divided vertically; 3, a ripe fruit cut in half; 4, a stone divided longitudinally.

It was the policy of Moses to direct the Israelites' attention to this culture from the beginning—aware as he was of the sources of wealth and comfort which it opened to the people. The advantages in this respect, which the Land of Canaan, to which they were going, possessed over Egypt, which they had left, was frequently pointed out to their notice, as one of its prime recommendations. It was "a land of oil olive;"<sup>a</sup> in which they should enjoy the benefit of olive-trees, which they had not planted;<sup>b</sup> and it was probably to enforce attention to this essential branch of agriculture that very considerable quantities of olive oil were made necessary in the ritual service, for the lamps, and for use in different kinds of offerings.<sup>c</sup>

The result was in accordance with these intimations. The Hebrews applied themselves with much zeal to carrying on the olive culture which the former inhabitants of the land had established. We afterwards, at distant intervals, read of "olive-yards" as very common possessions,—<sup>d</sup> just as we would speak of an orchard. The more extensive plantations seem to have been in "the low plains;"<sup>e</sup> but olives were also grown on the hills, as the mere name of the Mount of Olives, near Jerusalem, would alone intimate. They were also grown on Mount Carmel.

It was from the trees that grew on Mount Olivet that the Israelites obtained the olive-branches which, with those of other trees, they employed at the Feast of Tabernacles.<sup>f</sup> There appear to have been figures of olive-trees in the temple;<sup>g</sup> and we know that its door-posts, as well as the images of the cherubim, were made of olive-wood. Olive-trees were grafted, as we learn from the only passage in Scripture in which such an operation is mentioned.<sup>h</sup> It

<sup>a</sup> Deut. viii. 8.

<sup>b</sup> Ibid. 11.

<sup>c</sup> Exod. xxv. 31; xxvii. 20; xl. 37; Num. xv. 4, 9; xxviii. 5, *et seq.*; xxix. 9, 14; Lev. xxiv. 2. See also Mishna, tit. Menachoth, cap. viii. sect. 3. 4.

<sup>d</sup> 1 Sam. viii. 14; 2 Kings v. 26; Neh. v. 11.

<sup>e</sup> 1 Chron. xxvii. 28.

<sup>f</sup> Neh. viii. 15.

<sup>g</sup> Ps. xlii. 8; Zech. iv. 3; Rev. xi. 4.

<sup>h</sup> Rom. xi. 17. 24.

would also seem that at times the tree cast off its blossoms, and "the labour of the olive failed."<sup>a</sup> It has been conjectured that this was owing to some blight, either by frost or insect; but we happen to know that this generally occurs after the trees have been temporarily exhausted by over-production in a succession of genial seasons. The fruit was gathered, in the first instance, by *shaking* the tree; and, in the second, by *beating* the branches.<sup>b</sup> The oil appears to have been extracted from the olive, like the juice from the grape, by *treading*, at least in the first instance.<sup>c</sup> The first-fruits of the oil were offered at the Feast of Ingathering, or of Tabernacles, on the 15th day of the seventh month.<sup>d</sup>

Large quantities of the oil were used by the Israelites themselves. It entered largely into their diet,—vegetable oils, and especially olive-oil, being preferred by them for many of the purposes to which we apply animal fats, gravies, and butter. They also employed it liberally in anointing their persons, for which use it was often perfumed. It was likewise burnt in lamps; and there were various disorders in which it was medicinally employed.

Besides the large quantities consumed at home, the Israelites were enabled to raise a large surplus of olive oil for sale. The extent and importance of this branch of Jewish traffic may be estimated from the large quantity with which Solomon undertook to supply the king of Tyre by the year.<sup>e</sup>

In Dr. Bowring's instructive 'Report on the Commercial Statistics of Syria,' which has just been issued, we find the following passage respecting the olive-trees and olive-oil of Syria:—

"The quantity of olive-oil consumed in Aleppo, for all uses, is calculated at about 8000 to 10,000 cantars,<sup>f</sup> the average supply from the neighbourhood being about 5000 cantars annually: the olive-trees yield at most an abundant crop every other year. The quantity consumed from Damascus, *brought from Safet, Nablous, and the southward*, amounting to three-fourths of the whole quantity, and one-fourth from the environs of Damascus, is about 4800 to 5000 cantars annually, for soap-boiling, burning, and eating; but the quantities vary both at Aleppo and Damascus, depending much on the production of the olive-trees, which yield precariously, so that sometimes an abundant crop is obtained but once in four years. It is understood that Ibrahim Pasha has made arrangements for extending the cultivation of olives, and introducing an improved method of expressing the oil at Tripoli, and in the neighbourhood. Oil presses have lately been imported from France, and the result is said to have been satisfactory, both as regards the quantity and quality of the oil produced."

A few words respecting the Mount of Olives may not here be misplaced. This hill will seem to many of our readers perhaps the most interesting locality in the world. The marks and boundaries of Jerusalem itself have been so altered in the course of ages, that it would be difficult to fix upon any spot which may be supposed to present even nearly the same appearance which it did in the time of Christ. But respecting the Mount of Olives there is no doubt or question. In all the changes of time and of possessors, it has continued to retain its name, and to exhibit the perennial green of the tree from which that name was derived. There is much reason to conclude that, even in its surface, it is now little different to what it was in that day when King David went up its ascent "weeping and barefoot;" or that later day when the Son of Man was wont to resort thither—when from thence he wept over the doomed city, whose "goodly buildings" he had viewed—and when at last he ascended thence to resume his place "at the right hand of the Majesty on high."

That any of the olive-trees now found there should have existed in the time of Christ can scarcely be expected. Yet there are eight old trees on the lower slope of the mountain, towards the brook Kedron, standing in the supposed site of the garden of Gethsemane, to which this ancient date is ascribed by the monks, and which are in consequence regarded with high veneration by the pilgrims. To this it has been objected that, according to the testimony of Josephus, all the trees within some distance of Jerusalem were cut down by the Romans to

<sup>a</sup> Job xv. 33, and Habak. iii. 17.

<sup>b</sup> Dent. xxiv. 20; Isa. xvii. 6.

<sup>c</sup> Micah vi. 15.

<sup>d</sup> Exod. xxiii. 16; Lev. xxiii. 19; Num. xviii. 12.

<sup>e</sup> See the History at p. 507.

<sup>f</sup> The Syrian cantar is 180 okees of Constantinople, and equal to 504 lbs.

be employed in the works raised against the devoted city. And this, together with the improbability that such trees should exist for above eighteen centuries, has been considered conclusive against the claim made for these old trees—although it has not been denied that they are probably the oldest olive-trees in the world. Lastly, however, these claims have found an advocate in Dr. Wilde,<sup>a</sup> whose statement involves the best description of the trees we have met with, and which, on that account, we have given in the note below.<sup>b</sup>

The trees which bear the honoured name of “the cedars of Lebanon” are the most conspicuously exhibited among the higher ascents of the mountain from which they take their



[Cedars of Lebanon. Laborde.]

name. This is not on the summit of Lebanon, or on any of the summits which that range of mountains offers, as sometimes has been imagined; but is at the foot of a lofty mountain, in what may be considered as the arena of a vast amphitheatre, open on the west, but shut in by high mountains on the north, south, and east. The cedars here stand upon five or six gentle elevations, and occupy a spot of ground about three-fourths of a mile in circumference. A person may walk around it in fifteen minutes. The largest of the trees is about forty feet in circumference. Six or eight others are also very large, several of them nearly of the size of the largest. But each of these is manifestly one or more trees, which have grown together, and now form one.

<sup>a</sup> 'Narrative,' ii. 315.

<sup>b</sup> "It is true that the Romans cut down the wood about Jerusalem; but the timber of our olive-tree would be of little value indeed in constructing engines, towers, and battering-rams to be used against the cyclopean walls of Jerusalem; and these trees in particular must then have been so slender that the besiegers would have considered them unfit for any such purpose. They are undoubtedly the largest, and, I may add with safety, the most ancient olive-trees in the world. The largest is twenty-four feet in girth above its roots, though its topmost branch is not thirty feet from the ground. The trunks of most of them are hollow in the centre, and built up with stones.

"There is nothing unnatural in assigning an age of nineteen centuries to these patriarchs of the vegetable kingdom, whose growth is the slowest of any in existence. They have not borne fruit for some years past; but though their trunks are greatly decayed, yet, from the hardness of the wood, and each part being so retentive of life, there is still a considerable head to each, whose light-coloured silky leaves hang like so many silver locks over their time-worn and aged stems, that now, in the evening of life, are fast tottering to decay."

They generally separate a few feet from the ground into the original trees. The handsomest and tallest are those of two and three feet in diameter. In these the body is straight, the branches almost horizontal, forming a beautiful cone, and casting a goodly shade. Pliny Fisk,<sup>a</sup> whose account we are now following, measured the height of one of them by the shade, and found it ninety feet. The largest were not so high, but some of the others seemed to him a little higher. He counted them, and made the whole number three hundred and eighty-nine; but his companion (Rev. J. King), who in counting omitted the saplings, made the number three hundred and twenty-one. "I know not," observes Fisk, "why travellers have so long and so generally given twenty-eight, twenty, fifteen, five, as the number of the cedars. It is true that of those of superior size and antiquity there are not a greater number; but then there is a regular gradation in size, from the largest down to the mere sapling." This is confirmed by another and later American traveller, who confesses he did not count them, which, from the nature of the ground and the situation of the trees, would be no easy matter;<sup>b</sup> but he counted a small section, and was disposed to think that there might be three hundred to five hundred trees that are above a foot in diameter—possibly one hundred and fifty that may be above two feet—and about fifty or sixty that may be from three to four feet. Of the few he measured the largest was thirty-nine feet in circumference—one thirty-two—one twenty-nine—one twenty-eight—one twenty-three. These may serve for a sample. "It is pretty certain," remarks this traveller, "that this grove did not furnish wood for Solomon. It lies opposite to Tripoli, which is two days north of Beirout, and Beirout is [forty-five miles] north of Tyre, and [twenty-five from] Sidon. It lies far from the sea, and has a piece of country between it and the sea, as rough as can well be found anywhere. The grove does not appear to be diminishing, but rather increasing. I saw no stumps of fallen trees, and young ones were springing up. There is a kind of religious reverence for these trees among the neighbouring villagers. They have a singular appearance standing alone in the midst of a small plain on which no other trees grow, with no other trees above them, nor for a considerable space below. Another singular fact is, that there is no running water among them. There is a stream on the side of the plain, but it comes not near them. The ground appears enriched with the leaves that fall from them, and looks precisely as the soil usually does in a pine grove."

Upon the whole, the grove failed to make upon this traveller the impression for which he was prepared—and perhaps *because* he was prepared. On approaching them at first, he says:—"Near the middle of the little plain, at the foot of the steep ascent below us, we saw a clump of trees; but they looked too few or too small for the cedars. *They resembled a small orchard of evergreens.* We found, however, on reaching the plain that these were the cedars we sought. They stand in irregular groups, spread over several little stony knolls, and may possibly cover eight or ten acres of ground."

Such undervaluing impressions had been fairly met, or rather anticipated, by Fisk, who observes:—"Let such a one put himself in the place of an Asiatic passing from barren desert to barren desert, traversing oceans of sand, and mountains of naked rock, accustomed to countries like Egypt, Arabia, Judea, and Asia Minor, abounding in the best places only with shrubbery and fruit-trees,—let him, with the feelings of such a man, climb the rugged rocks, and cross the naked ravines of Lebanon, and suddenly descry among the hills a grove of three hundred trees, such as the cedars actually are, even at the present day, and he will confess *that* to be a fine comparison in Amos ii. 9,—'Whose height was as the height of the cedars, and he was strong as the oaks,'—let him, after a long ride in the heat of the sun, sit down in the shade of a cedar, and contemplate the exact conical form of its top, and the beautiful symmetry of its branches, and he will no longer wonder that David compared the people of Israel, in the days of their prosperity, to 'the goodly cedars.'<sup>c</sup> A traveller who has just left the forests of America may think this little grove of cedars not worthy of so much notice, but the man who knows how rare large trees are in Asia, and how difficult it is to find timber

<sup>a</sup> 'Memoir of the Rev. Pliny Fisk, A.M., late Missionary to Palestine. Boston, 1828, p. 327.

<sup>b</sup> Rev. J. Paxton, 81.

<sup>c</sup> Psalm lxxx. 10.

for building, will feel at once that what is said in Scripture of these trees is perfectly natural. It is probable that in the days of Solomon and Hiram there were extensive forests of these trees in Lebanon. A variety of causes may have contributed to their diminution, and almost total extinction. Yet, in comparison with all the other trees I have seen on the mountain, the few that remain may still be called 'the glory of Lebanon.'<sup>a</sup>

<sup>a</sup> The allusions necessarily involved in the preceding statement to the operations of the king of Tyre in cutting timber in Lebanon for king Solomon suggests that account of the manner in which such operations are now conducted in the mountains. This we are enabled to supply from Dr. Bowring's very valuable 'Report on the Commercial Statistics of Syria,' which has just been issued. It strikes us that the method by which labourers are obtained for the service, and the manner in which they are supplied with food, is deserving of particular attention, as probably illustrative of the proceedings of the two kings, and in particular of the mode in which Hiram disposed of the corn obtained from Solomon. The statement in the 'Report' is too long for quotation entire; and we are able to introduce only the principal facts.

As the wood destined for Egypt is embarked at Scanderoon, it is of course obtained, as nearly as may be, from the mountains which enclose the gulf and plain of that part, it is necessary to premise that in this quarter the wood is derived from two lines of mountains; namely, from the mountains of Byass, which extend north and south at the bottom of the gulf, and which are much the highest. They are also the most richly timbered, both as to variety and quantity, the trees being of much larger growth, except near the base, owing to the difficulties of transporting the timber to the sea-shore, from the steepness of the mountains and the want of all roads. The trees on them are white and yellow pine, of length from 160 to 150 feet, and of dimensions, to take a square of from 24 to 25 inches:—

Yellow Oak	. . . . .	80 feet and 18 to 20 inches square.
Green	. . . . .	18 to 20 feet and 7 to 9 inches square.
Beech	. . . . .	30 to 35 feet and 14 to 15 inches square.
Linden	. . . . .	40 to 50 feet and 25 to 27 inches square.

The pine is mostly knotty and very full of turpentine. The oaks of both species are straight-grained, like the American. The beech is of good close-grained quality, but not nearly so plentiful as the other two. The linden tree is scarce.

In 1837 about 150 wood-cutters were employed on these mountains, with twice the number of trimmers and dressers; but in 1838 the work was confined to the lower parts, from the difficulties of the transport, and from the want of roads, which, it is estimated, would require an outlay of 3000*l.* or 4000*l.* to make practicable. About 10,000 trees, cut the years 1836 and 1837, were abandoned in consequence, some of them as much as 50 feet long, but mostly of sizes about 25 feet long by 10 inches in the square.

The distance from the sea is from three to five leagues. 150 men could cut 35,000 to 40,000 trees in the year, which it would require twice the number to dress and trim, and upwards of 600, with practicable roads, to transport to the sea with buffaloes and bullocks. At the distance of about two to three leagues from the coast, where the work is still carried on, the trees average from 15 to 20 feet long, and 8 to 12 inches square; from thence is brought a large quantity of firewood in large billets. In 1837 ten or twelve vessels, of from 50 to 100 tons, were laden with it on government account.

The other source of supply is from the mountains of Bellan, which stretch east and west along the southern side of the Gulf of Scanderoon. They take their ascent at from about one mile to two miles from the sea, leaving a rich but entirely uncultivated plain between them and it. On these mountains the trees are:—

Pine	. . . . .	from 30 feet long, by about 15 to 16 inches in the square;
Yellow Oak	from 20 to 30 feet long, by about 10 to 15 inches in the square;	

but few of that size. About 50,000 were cut in 1837, and brought down to the sea, for which about 100 men were employed in cutting, 200 dressing and trimming, and three times the number in the transport.

From both sources it appears that the number of trees shipped for Alexandria has been, by the year, about 55,000 to 60,000 [another statement says 70,000 to 80,000, in 1837]; about 40,000 fit for ship-building purposes, and the remainder for house purposes, freighted in 39 vessels of collectively 14,120 tons, besides 8 or 9 small craft, of 60 to 80 tons, which received cargoes of firewood.

In December 1837 a European engineer in the Egyptian service arrived from Alexandria, to select and superintend the cutting and preparing of 1,032,000 trees for dams and proposed works on the river Nile, 70,000 of which to be 23 feet long, and 8 inches square; the rest of small sizes, and even branches as low as 5 or 6 feet long. In fact, as Mr. Hay remarks (in his report to Dr. Bowring) the Egyptian government appears to consider the mountains of this part of Syria as an inexhaustible mine for timber.

We think that this statement puts in our possession several important and illustrative facts. It enables us to perceive one of the strong reasons which has made the mountain forests of Syria an object of desire to the rulers of Egypt, from the Pharos and Ptolemies down to the Sultans and to Mehemet Ali. It also shows the extent to which the more southern forests of Syria must have been denuded of its timber to meet the wants of a country so void of timber as Egypt. And the extraordinary demands occasioned by the peculiar wants of Mehemet Ali, and the operations which thence arise in the mountains and on the coast may suggest some analogy to the circumstances which attended and resulted from the extraordinary demands of king Solomon.

But to complete this view it is necessary to see how the labour required for this service is obtained and remunerated.

For this work, then, all the effective population of the district is forcibly taken, [as by Solomon, if not by Hiram,] not leaving even a sufficient number of men to cultivate the land for their own maintenance. But grain has been imported by the government [as by king Hiram, from Palestine] from other parts of Syria, and from Egypt, and issued out as a portion of their pay, which is nominally three piasters, or about seven pence halfpenny per day, but of which it falls short fully one third by their being obliged to take a fixed portion in grain, without reference to their actual wants, and more than they require, at a stated price, which is enhanced in various ways and under various pretences, so as to be much higher than what it could be produced for in the neighbourhood. Thus on one side of the gulf the wood-cutters have been obliged to buy corn at fifteen piasters the measure, while it might be had at nine piasters on the opposite side of the gulf. It is possible (for the system is an old one) that Hiram dealt thus with the corn which he received from Solomon; for that which had so much analogy in other points perhaps did not fail in this.

The cutters and trimmers of the wood are exposed to the contingency of a tree they have cut, being found, on trimming and squaring, to have perished at the heart or otherwise, when they receive no pay for it, but may take the tree and make what use of it they can: but in fact the time and labour is lost, as the distance seldom leaves it worth the transport. It seems, however, that competent persons are now employed in the selection of the trees to be cut down. Those who transport the trees to the coast, who are about four times the number of those otherwise employed, receive each a pair and a half of bullocks, which are valued to them

There are doubtless more cedar-trees growing in England now than there are on all the mountains of Lebanon. They are not uncommon in the neighbourhood of London, and attract attention by the singular appearance which their horizontal and compact *layers* of foliage offers. Most of the specimens seen in this country want height and bulk; but this is probably only owing to their youth.

Among the trees which yield their fruit in summer, the sycamore fig-tree perhaps required our earlier notice. This is the "sycamore-tree" of the Bible, and is by no means to be con-



[Sycamore Fig-tree. *Ficus Sycamorus*]

founded with the great maple, which is the true sycamore. It is a large tree, with its leaves like those of the mulberry, and with a fruit much resembling the fig; and hence the compound name

at about 700 or 1000 piasters per pair, which sum they are debited with, and must make good in case of loss, death, or accident: the consequence is, that when a man meets with such a misfortune, before he has the means of repairing it—which he must be fortunate and indefatigable even to hope for—he generally has recourse to flight.

The season for working the timber continues for about eight months,—from the middle of March to the middle of November,—the remaining four months the people are left in a great measure to themselves; but being winter months, they cannot turn them to much account, excepting to prepare and sow a little land to meet the most pressing exigencies of their families. A few of them who follow different trades may find some little employment in the larger villages. But independently of such resources, their yearly earnings may be computed thus:—

		Piasters
<i>Cutters</i>	for 224 working-days, at 2½ piasters . . . .	504
	Deduct for contingencies . . . .	60
		—444
<i>Trimmers</i>	for 224 working-days at 3 piasters . . . .	672
	Deduct for contingencies . . . .	80
		—592
<i>Transporters</i>	for 224 working-days, at 3½ piasters . . . .	784
	Deduct for keep of animals . . . .	400
		—384

The contingencies of this last and most numerous class are very heavy, for not only have they to provide (at the computed cost of 400 piasters) for the keep of their bullocks during the winter months when grass fails; but during the four years in which they remain fit for their hard service, he has to cover their cost, which is debited to him at the rate of 350 piasters each bullock—or 1050 piasters. To meet this he would have to lay aside 262 piasters of his net earnings of 384 piasters, leaving him but 122 piasters (or twenty-four shillings! five current piasters in Syria being equivalent to one shilling), for his eight months daily subsistence, being a fraction over half a piaster a day. It is also to be considered that the above rates of pay are often merely nominal; as the men have so much above the fair market price to pay for the corn and other provisions supplied to them.

We have dwelt the more particularly on the developments of this system, as it very strikingly illustrates the principles and results of that kind of compulsory labour to which there are so many allusions and references in the early history of the Hebrews.

As it further regards the timber, it results from the preceding estimates, that timber of from 15 to 18 inches square, prepared either for the saw or for working, stands in, ready for shipment, at one piaster the foot.

A tree of from 25 to 30 feet in length, of the above dimensions, may be cut into planks by three sawyers (in Syria the saws are generally worked by three men, one above and two below) in about two days. The wages of the sawyers (three piasters a day) added to the cost of the trees, brings that of inch planks (of from 25 to 30 feet long, and exceeding a foot in breadth) from three to three and a half piasters each, or little more than a farthing per foot.

which has been given to it. Hasselquist affirms that the stem is often fifty feet thick ; but he speaks of it as in Egypt, which seems to afford the climate the most congenial to its nature. It seldom grows straight, but is generally bent and twisted ; its branches extend very far horizontally, affording excellent shelter.<sup>a</sup> Forskal states that its head is often forty yards in diameter ; and it thus affords an expansive and excellent shade, for the sake of which, not less than for its fruit, it is often planted by the way-side, near villages, and on the sea-coast. When old, the tree becomes gnarled and broken. The timber is of little use to the carpenter, and is now used chiefly for firewood. But being, although soft and insubstantial, of a durable nature, and, what is more, being almost the only timber tree in the country, it was employed by the ancient Egyptians for boxes, tables, doors, and other objects which required large and thick planks, as well as for idols and statues ; and from the great quantities discovered in the tombs alone, it is evident that the tree was largely cultivated.<sup>b</sup> It is alleged that the mummy-cases, which, after the lapse of 3000 years, came before us as fresh and *new* as in the day they were made, were of this wood. It is alleged that its wood is impregnated with a bitter juice, which protects it from being worm-eaten ;<sup>c</sup> but Professor Don is rather disposed to conjecture that they were made from the timber of *Cordia Myxia*. We know not how far he would extend this to the other objects supposed to be made of sycamore wood.

To the Egyptians as well as to the Israelites, the sycamore was highly recommended by its fruit, to which both were very partial. This fruit is not produced upon the young branches, but in clustered racemes upon the trunk and the old limbs. These clusters are sometimes so large that a man can scarcely grasp them. Hasselquist says that the tree buds in March, and that the fruit ripens in June. This may be the more proper and usual times ; but Norden alleges that the tree is always green, and [like the true fig-tree] bears fruit several times in the year, without observing any certain seasons. He had observed some sycamores giving their fruit two months after others had ceased. He adds, "The fruit has the figure and smell of real figs, but is inferior to them in the taste, having a sweetness which is not pleasant to a European taste. Its colour is a yellow, inclining to an ochre, shadowed by a flesh colour. In the inside it resembles the common fig, excepting that it has a blackish colouring with yellow spots. This sort of tree is pretty common in Europe ; the people of that country live to a considerable extent upon its fruit, and think themselves well regaled when they have a piece of bread, a couple of sycamore figs, and a pitcher of water."

Hasselquist states that the tree is wounded or cut, at the time it buds, by the inhabitants, who say that without this precaution it would not bear fruit. Pliny and the older natural historians affirm that the fruit would not become perfectly ripe until scarified with an iron comb, after which it ripened soon ; and Jerome (upon Amos viii. 14) states that without this or some analogous operation, the fruit could not be eaten from its intolerable bitterness. He adds that to render the tree fruitful it was necessary to make chinks and clefts in the bark, through which a kind of milky liquor continually distilled.

The importance of the tree in Egypt shows how grievous must have been the loss sustained by the ancient inhabitants when "their vines were destroyed with hail, and their sycamore trees with frost."<sup>d</sup> Various passages of Scripture evince the attention which was paid to it in Palestine. It was there used in building ordinary houses ;<sup>e</sup> and so to "change sycamores into cedars"<sup>f</sup> was a proverbial expression for an improved condition of society as involved in, or indicated by, superior buildings. Sycamore trees were of so much importance that David placed Baal-hanan, the Gederite, "over the sycamore trees that were in the low plains."<sup>g</sup> We also read of their growing by the wayside in the time of Christ.<sup>h</sup> Correspondingly with the intimation of their greater frequency in the low plains, the Talmud notices their growth in the plain of Jericho, in which, indeed, from the resemblance of its climate to that of Egypt, we should the most expect to find them.

<sup>a</sup> Savary, i. 44.<sup>b</sup> Wilkinson, iii. 168.<sup>c</sup> Savary, ii. 45.<sup>d</sup> Psalm lxxviii. 47.<sup>e</sup> 1 Kings, x. 27.

Isa. ix. 10.

<sup>f</sup> 1 Chron. xxvii. 28.<sup>h</sup> Luke xvii. 6, xix. 4.



**THE VINE.**—Grapes continue to be gathered for the table; but it is not until October that the vintage will engage our attention. It will be remembered that in Moslem countries vines are chiefly cultivated for the sake of the grapes as a table fruit; the followers of Mohammed not being allowed to drink, or consequently to make wine. It is only made by Christians for their own consumption or for sale to unscrupulous Moslems.

**GRAIN.**—In some parts the harvest still continues, and fields of wheat (chiefly bearded) may still be seen standing when this month expires. The maize and dourra is now fast ripening to the harvest. The context would suggest that Paxton (this month) speaks with reference to the latter, or to both, when he says,—“The corn was of a more diminutive kind than I have seen in the East. It was beginning to tassel and silk, and yet its general height was not above four feet. With us, such a field of corn would not be thought worth anything. It was, I believe, of the usual size and promise.”<sup>a</sup>

**ESCULENT VEGETABLES.**—The various species of herbs, legumes, and cucurbitacæ, which were ripe in June and July continue in season in August also; and we are not aware of any which first in this month become ripe.

**PLANTS.**—In some districts the cotton becomes ripe towards the end of this month; in others not until September or even October.<sup>b</sup> Paxton describes himself as unexpectedly gratified at meeting with a field of *hemp* on the east side of Damascus. It was, he says, the first, and, indeed, the only field of hemp he saw in the East. It was just beginning to blossom. In fact, we have not ourselves met with any notice of hemp as growing in *Palestine*. But Burckhardt notices its cultivation in the valleys of Sinai,<sup>c</sup> and in Dr. Bowring's ‘Report’ we read that the Damascus district produces about 1200 to 1500 loads of hemp, at 60 *piasters* the load, amounting to from 900 to 1000<sup>d</sup> cantars. About half this quantity is said to be produced around Aleppo. It is chiefly employed in making cord and twine for various domestic purposes, and none is exported. In the Mishna<sup>e</sup> hemp is barely mentioned, and in such a manner as to show that its cultivation was but little extended, or had been newly introduced; for it is judged necessary to premise that it was a plant, which, like the flax, afforded a thread from which vestments were fabricated. This explanation would have been superfluous had the plant been generally known. It is not mentioned in the Scriptures.

## SEPTEMBER.

**WEATHER.**—With reference to the weather at Aleppo, Dr. Russell reports, that during the first fortnight it is much the same as in the latter part of August, but rather more sultry. When no rain falls, the whole month continues clear and sultry; but commonly between the 15th and 25th heavy and black clouds arise, and hard squalls, blowing like whirlwinds from the west, fill the air with dust. This phenomenon forebodes rain; for within a day or two, some heavy showers fall, called *the first rains*, by which, although not considerable in quantity, the air being much refreshed, the remainder of the month is rendered very pleasant.

Lightning, without thunder, is seen almost every night, flashing from the edge of heavy clouds, in the north-west quarter; but when it appears in the west or south-west, it is a sure sign of approaching rains, which are often accompanied with loud thunder. The westerly wind in this month seldom rises above a light breeze, and it is very often perfectly calm.

The greatest height of temperature indicated by the thermometer is ninety-two degrees, the least sixty-two degrees, and the greatest difference in any one day is twelve degrees. The morning station of the mercury at the beginning of the month is seventy-eight degrees, the difference in the afternoon is rather greater than in August. Upon the fall of rain the mercury

<sup>a</sup> ‘Letters,’ 46.

<sup>c</sup> ‘Syria,’ 603.

<sup>b</sup> Compare Korte, 437; Neitzchutz, 213, 224, 225; Pococke, ii. 88; Russell, i. 33.

<sup>d</sup> Misprinted 100.

<sup>e</sup> Mishna, tit. Negaim, c. xi. § 2.

immediately sinks three or four degrees, and usually continues descending till it gets to sixty-five degrees. After this the difference of the morning and evening height of the thermometer seldom exceeds three or four degrees, and during the rain is perhaps only one or two degrees.

Various travellers in Palestine complain in the early part of this month of the excessive heat, as in former months; but some of them let us know that the nights begin to be somewhat cold. The simoom still blows at times.<sup>a</sup> Mr. Addison<sup>b</sup> being, at the latter end of this month, in the lazaretto at Beirout, describes the weather as "heavenly, and the nights most lovely. We are obliged to get under cover during the middle of the day, and creep under our mosquito-nets to escape the flies, but the mornings and evenings are delicious."

**TREES AND SHRUBS.**—The fruits that were before in season continue ripening on the trees, as the various kinds of apples, pears, plums, and figs. The pods of the carob-tree also ripen before and in this month. The pomegranate now offers ripe fruit: and this, from its importance in Palestine, and from the frequency of allusions to it in Scripture, requires further notice. The tree will endure our own winters, and grows well in our gardens;<sup>c</sup> but it is here valued chiefly for its blossoms, as although it ripens its fruit tolerably well in warm seasons, this ripening is too late in the autumn for the fruit to be able to acquire that delicate flavour which constitutes its value, and which it receives in its native climes.

The pomegranate tree<sup>d</sup> rises with a woody stem upwards of twenty feet high, sending out branches the whole length; which likewise put out many slender twigs, rendering the whole tree very thick and bushy. Some of these twigs are armed with sharp thorns, which are more abundant in the wild than in the cultivated. The leaves are of a lucid green, and stand opposite to each other: they are narrow and spear-shaped, about three inches long, and half an inch broad in the middle. The flowers come out at the ends of the branches singly, or three or four together. Frequently one of the larger terminates the branch, and immediately under that are two or three smaller buds which continue a succession of blossoms for some months, giving a continued brilliance to the gardens in which they grow, after (in the East) most other trees have ceased their blossoming. The blossoms are bell-shaped, large, handsome, and of a red colour. From the deficiencies of the fruit in this country, the double flowering kind is much preferred, for the sake of the peculiarly large and fine flowers, which are of a most brilliant scarlet; although when the flowers are double there is no fruit. From the quantities imported into this country the fruit is much better known than the tree, and therefore in an unscientific notice requires no further description than that it is about the size of an orange, and contains within its ruddy-brown and hard leathery rind a number of cells divided by membranous partitions, in which lie, closely packed in orderly rows, the seeds or grains, which are variously angular, pellucid, generally tinged with red, and always shining like crystals. Their richly-flavoured juice is most refreshing and pleasant in the East; and the extracted grains are not only eaten, but are largely employed in the preparation of drinks (sherbets) for summer, to which they impart a ruddy and vinous tinge. Scarcely



[Pomegranate.]

<sup>a</sup> Compare Korte, 426; Wormser, i. 212; Tschudis von Glarus, 236; Des Hayes, 370; Polschnitz, ii. 26; Schulze, P. V. 418—420; Robinson, ii. 235.

<sup>b</sup> Damascus and Palmyra, ii. 7.

<sup>c</sup> Like many other trees and plants, now found to be quite hardy and able to endure our severest winters, the pomegranate-tree, was formerly nursed up in cases and preserved in greenhouses with great tenderness and care.

<sup>d</sup> *Mala granata*.

any of the various sherbets employed in Moslem countries are more valued than those which are made with the juice of the pomegranate.

The tree is much cultivated in the gardens and orchards of Palestine and Northern Syria.<sup>a</sup> The ripe fruit is seldom abundant earlier than the end of August, when, and in September, most families lay in a stock for winter consumption. There are three varieties of the fruit, one sweet, another very acid, and a third in which both qualities are very agreeably blended. The juice of the sour sort is often used instead of vinegar. The others are cut open when served up to table; or the grains, taken out and besprinkled with sugar or rose-water, are brought to table in saucers. The grains also, fresh as well as dried, make a considerable ingredient in cookery.<sup>b</sup>

Pomegranates were among the good things of the Land of Canaan promised to the Israelites,<sup>c</sup> and accordingly they were among the choice fruits which were brought from that land by the spies.<sup>d</sup> Pomegranates were not forgotten by the prophets of the restoration.<sup>e</sup> They were planted in orchards as principal trees;<sup>f</sup> and it is more than probable that they attained larger sizes than are known to us: for Saul (if the text is correctly read) pitched his tent on one occasion under a pomegranate-tree in Migron.<sup>g</sup> It would seem that the present employment of the juice in preparing a pleasant and refreshing drink was practised by the Israelites.<sup>h</sup> And from the manner in which its figure was employed in the ornaments of the temple and of the priestly raiment,<sup>i</sup> it may appear that some religiously symbolical ideas were connected with it.

In a preceding page (cclxx) the *Cordia Sebesten* has been noticed after Hasselquist. This month it produces its fruit, the Sebesten plum. The tree, or rather shrub, is small, about nine feet high. The large clusters of beautiful flowers, changing from a deep vermilion to a bright scarlet, and at last assuming a purplish hue, make it a fine object when in blossom. The fruit is shaped somewhat like an inverted pear, and is the only edible fruit (except the similar fruit of the *Cordia Myxa*) which the whole order of Cordiaceæ affords. The wood is aromatic, and a small piece of it emits a strong perfume in burning. The natives of the Society Isles procure the red dye with which they colour their clothing from the juice of the leaves, mixed with that extracted from the leaves of a species of fig or of some other trees. Such are the principal characteristics of the cordia sebesten: although this species does grow in Palestine, it is evident that the tree to which Hasselquist and others<sup>k</sup> give the name, is really the cordia myxa, or Assyrian plum, which certainly does grow in Syria as well as in Arabia and Egypt; and it is certainly this and not the other from which glue (of which Hasselquist speaks) is obtained. The wood of this tree is tough and solid, and is used in procuring fire by friction. The fruit (from which the glue is obtained) is red, and about an inch in diameter: it is only eaten by children.

The Rev. W. Jowett describes the Lebanon districts to be as remarkable for the innumerable multitude of their *mulberry* tree as is Egypt for its palms; and remarks that during the chief part of that year the mulberry trees clothe the prospect in every direction with most delightful verdure.<sup>l</sup> Having already fully noticed this tree, we are only induced to return to the subject for the sake of introducing to the notice of the reader the additional and very valuable information contained in Dr. Bowring's recent 'Report,' the substance of which will be found in the note below.<sup>m</sup>

<sup>a</sup> Rauwolf, 21, 64, 102, 163; Cotovic, 312; Morrison, 245, 496; D'Arvieux, ii. 311; Burckhardt, 100, 102, 274.

<sup>b</sup> Russell, i. 85.

<sup>c</sup> Deut. viii. 8.

<sup>d</sup> Num. xiii. 23.

<sup>e</sup> Hag. ii. 19.

<sup>f</sup> Solomon's Song, iv. 13.

<sup>g</sup> 1 Sam. xiv. 2.

<sup>h</sup> Solomon's Song, viii. 2.

<sup>i</sup> Exod. xxviii. 34; 1 Kings vii. 16.

<sup>k</sup> Rauwolf, 21, 64; D'Arvieux, ii. 234; Egmont and Heyman, ii. 242.

<sup>l</sup> 'Christian Researches in Syria,' 75.

<sup>m</sup> The information is contained in a Report, rendered to Dr. Bowring by Colonel Campell, lately the British consul-general in Egypt. He considers that silk is the principal article of produce in Syria, and that which under an improved system of management would more than double the resources of that country. It is cultivated more generally in the districts of Saida, (Sidon) Beirut, Lebanon, Damascus, Tripoli, Latakiah, and Antioch, where extensive plantations of the mulberry tree exist, and which have been greatly increased (in common with other principal branches of culture) since the country has been under the rule of Ibrahim Pasha.

Colonel Campell then proceeds to state that "the mulberry trees are planted in (quinquax) rows, at four paces distant from

Captain Light, travelling this month in Palestine, takes frequent notice of the Sindian or Turkish oak, the acorn of which differs from that of the common species by the fact of its growing in a tufted pod. He saw it on Mount Tabor, and on the slopes of Lebanon;<sup>a</sup> and the same trees are often mentioned by Buckingham in traversing the country beyond Jordan.

**THE VINE.**—Clusters of ripe grapes are now common in the market. It has been disputed when the vintage commences in Palestine. Russell says that the vintage is at its height about Aleppo in November; but he does not say when it commences. It is probably earlier in the more southern parts of Syria; and from a variety of circumstances we are led to conclude that the vintage commences about the middle of September, and is continued into and through October. That it is at its height in the early part of October appears from the testimony of Paxton.<sup>b</sup> We shall therefore be on assured ground in deferring to the ensuing month that account of the operations of the vintage which it will be our duty to render.

**GRAIN.**—As it appears that all the grain is off the ground in the month of September, we may suitably notice here the kinds of grain which have not hitherto engaged our attention, and with the periods of collecting which we are not precisely acquainted.

*Dourra*, as the natives designate *Holcus Sorghum*, is gathered in August in Egypt; and as the seasons of production are somewhat more backward in Syria, it is well to ascribe the harvest of this grain to September. This has the negative confirmation derivable from the fact that after August and September no travellers speak of the fields of standing *dourra*. In that country the *dourra* is very extensively cultivated, and principally forms the bread of the labouring population. According to the tables of Dr. Bowring,<sup>c</sup> the produce of *dourra* is only exceeded, and not greatly exceeded, by that of wheat;<sup>d</sup> but we do not suppose that it maintains so high a proportion in Syria, which appears less favourable to its culture. How-

each other. During the first eight years they give a greater or less quantity of leaves. After that term their produce, if cultivated with care, remains stationary, but soon begins to decrease if the cultivation be neglected. The plantations of mulberries require great care, and the ground between the trees is ploughed or turned up eight times each year, and the greatest attention is necessary to extirpate all weeds. When a person buys a plantation, he reckons that three trees will give 20 rottoli [of 5lbs. each] of leaves. Then 130 to 140 rottoli of leaves are considered to suffice for the nourishment of worms enough to give one rottol of silk of 720 drachms. After the worms are hatched, they are left twenty days in a room in osier baskets. The worms are kept four times fasting in all their existence; after eight days they fast four or five days; they are then removed to a larger habitation, made of reeds and matting, and in which they make their cocoons or balls. The Syrians are ignorant of the manner of making their worms produce twice in a year; they are ignorant of any other plant (as in Europe) to serve as a substitute for the mulberry leaves, with which the worms may be nourished during the first four days. The *miri*, or land-tax, is fixed in proportion to the quantity of seed (eggs) of silkworms which the cultivators can produce. Experience has shown that one ounce of eggs produces three rottoli of silk. In the district of Beirut, at half an hour from the city, the *miri* is 30 piastres, besides three piastres more per rottol in virtue of a tax called *bisreye*, which makes 33 piastres tax in all per rottol. In the Lebanon the tax is infinitely higher; it amounts to nearly 100 piastres, and, although in the middle region of the mountains, one ounce of eggs gives somewhere about 50 per cent. more silk than on the plain or at the summit, still the whole produce is often absorbed by the enormity of the tax. In the neighbourhood of Beirut the mulberry plantations are worked in the following manner:—The proprietor takes a farm-servant, who, with his family, lives in the plantation, and does all the labour required for the cultivation of the mulberry-trees in the course of the year; but during the two months in which the silk is produced, they are obliged to hire people, and, between women and children, 15 are required for each 1000 mulberry-trees. Labour is rather dear in Syria; a man is paid five piastres per day, a woman four piastres, and a young person three piastres. In conformity with a convention generally adopted, the farm-servant receives for his share one-fourth of the produce; of the remaining six-eighths, three-eighths are absorbed by the expenses of cultivation, one-eighth serves to pay taxes, so that the clear gain of the proprietor is only one-fourth of the whole. And as a plantation which would give 20 loads of leaves, costs, in the present day, 6000 piastres, a capital employed in this branch would not yield more than five per cent. In one "division" it is generally calculated that there are 1350 trees which will give 450 loads of leaves, and will produce 64 rottoli of silk, which, at 200 piastres per rottol, give a total of 12,900 piastres; from which must be deducted one-fourth, or 3,200 piastres, for the farm-servant; three-eighths, or 4,800 piastres for the expenses of cultivation; and one-eighth, or 1,600 piastres for the payment of taxes: this makes, altogether 9,600 piastres, leaving the proprietor the net profit of 3,200 piastres.

In the Lebanon the mode of working is different, inasmuch as the proprietor cultivates the ground himself, instead of letting it out to a farm-servant. By this means he economises one-fourth of the produce, but as the taxes, as I have stated already, are much higher, the gain of the proprietors, in good years, is not more than one-fourth, and in bad years, it hardly suffices to pay the expenses of cultivation and the amount of the taxes. The total amount of silk produced in Syria may be quoted at 1700 cantars, of which,—100 are from the district of Saïda; 200 from that of Beirut; 100 from that of Tripoli; 700 from that of Lebanon; 70 from that of Damascus; 30 from that of Latakia; and 500 are from that of Antioch.

<sup>a</sup> Light, 199, 221.

<sup>b</sup> Letters, 214.

<sup>c</sup> Report on Egypt, p. 17.

<sup>d</sup> Wheat, 950,000 ardebs; *dourra*, 850,000; beans, 800,000; barley, 560,000; maize, 160,000; *helbeh* ["a grain with somewhat bitterish taste, whose flower is mixed with *dourra* by the Fellahs"], 110,000; lentils, 70,000; chick-peas, 50,000; lupinus, 35,000; total 3,585,000 ardebs. The ardebs are those of Cairo, which are equal to 1000 of those of Alexandria, and to 14 Paris bushels. This was in 1834. It is to be regretted that a similar estimate for Syria was not attainable.

[Dourra. *Holcus Sorghum*.]

ever, it is grown along the Jordan and its lakes, and in the plains of the country on both sides that river,—that is, wherever there are facilities for the artificial irrigation which this grain much requires, and for the purposes of which the fields are divided into squares, as in the cut at p. ccxcvii. The frequent waterings which it requires during the season of drought are so laborious, where water is not of the easiest access, that, even on the borders of the Nile, people are driven by this exigency, rather than by choice, to the culture of wheat and barley. When the dourra approaches its maturity, men are stationed at the intersections of the fields, to fray by their cries the birds, which are fond of this grain, and swarm to devour it in its panicle. It rises to about six feet, and, when fully ripe, is cut, at about six inches from the ground, with a kind of sickle, smaller and less curved than that employed by our reapers. It takes the day's labour of ten reapers to clear one *feddan*.<sup>a</sup> After being exposed for some days to the sun, the severed produce is taken to the threshing-floor, where the grain is trodden out by the feet of oxen. It takes two oxen the labour of five days to tread out the produce of one *feddan*. The grain is winnowed by being tossed into the air with forks of wood. In some parts of Egypt another crop of dourra is sown at the latter end of July or in August, and

is harvested in November. But we know not that this occurs in Syria.

The straw of the dourra is employed in Egypt as a covering for huts and cabins, and when the Arabs and the peasants of that country wish to cross the Nile, they support themselves (on their bellies) upon a bundle of it, by which they are enabled to pass over with less danger and fatigue. This mode of crossing rivers (though not always on bundles of dourra straw) is common in Western Asia.<sup>b</sup>

There are several varieties of this grain. That which is principally cultivated in Egypt, Arabia, and Syria, is of good quality, and affords a good white flour, which is generally made up into cakes, about two inches in thickness.

*Maize*, otherwise called 'Indian corn,' is called in Egypt "Syrian dourra," which name, while it indicates the resemblance to the plant of which we have just spoken, also conveys the impression that it was more common in Syria, and, possibly, that it was derived from that country. It may be of greater *relative* importance there; for, as seen by the extract lately given from Dr. Bowring's 'Report,' only a very small proportion of maize is cultivated in Egypt: but we are not aware that the culture is other than a subsidiary object even in Syria.

The maize (*zea mays*) is a monœcious grass of vigorous growth, with stems not more than two feet high in some varieties, but reaching the height of eight, or even ten, feet in others. The leaves are broad, and hang down from large rough sheaths that surround the stem. The male flowers grow in loose terminal compound racemes, standing clear of the leaves; the females are arranged in numerous rows on a spike, which is wrapped round by several folds of sheathing bracts, which press upon the grains, and give them that flattened figure which they eventually acquire when ripe. Each grain has a long thread-like style, which projects beyond the enveloping sheaths; and as there are some hundreds of them, the whole form a long tassel, which looks as if made of silk.<sup>c</sup> The figure and appearance of the flattened grains, lying one over the other in rows, is too well known to need description. The plant generally bears two full ears, the grains in which vary greatly in number. M. Girard

<sup>a</sup> This is the *acre* of Egypt and Syria, and may conveniently be compared to the English *acre*.

<sup>b</sup> See Girard, 'Mémoire sur l'Agriculture, &c., de l'Égypte,' in 'Descript. de l'Égypte,' xvii. 52—59.

<sup>c</sup> This description is copied from 'The Penny Cyclopædia,' art. *Maize*.

says that the average product of this culture in Egypt is eighteen for one, without including the value of the straw, which is there used only for fuel. It is fit for the sickle four months after being sown; and while in the ground the same attention is paid to the irrigation as with dourra. It is reaped with the sickle; and five or six men suffice to reap a feddan of maize in one day. The reaped maize is transported on the backs of camels or asses to a place near the village, where the women and children employ themselves in separating the ears from the stalk. The ears are then despoiled of the large leaves, which envelope them. Fifteen or sixteen such operators can in this way clear in one day the produce of a feddan of maize. The panicles are then exposed to the sun for twelve or fifteen days, that they may be completely dried. After this they are deposited in the magazines, and are there beaten, as needed, to detach the grain. *The green ears*, being tied in packets of five or six, are roasted, and thus form a sort of eatable to which children are very partial.<sup>a</sup>

[Maize. *Zea Mays*.]

Sir J. G. Wilkinson is well convinced from the evidence of the sculptures that the *dourra* was cultivated in Egypt in the most ancient times.<sup>b</sup> He also informs us that he had been assured that maize had been found in the ancient tombs of Thebes. This he doubts, but only on the ground that maize was “first discovered in Cuba by Columbus, in 1492.”<sup>c</sup> An American origin has indeed been commonly ascribed to it hence; its name of “Indian corn;” and it is unquestionable that the culture of maize was established in the New World, when first discovered by Europeans. Yet the name of “Turkish corn,” which, from the time of its first introduction into those countries, it has borne in Italy, Germany, and France, appears to indicate that its culture had been brought from the East; and, under this point of view, the westward movement of the Arabs may appear to have contributed to its expansion. Of this, however, there is no positive proof. There is no mention of maize in the documents which relate to their dominion in Sicily: yet, again, this fact would not certainly intimate that the product had not been introduced, but only that it was not exported, for it is only under the article of customs that such documents notice the products of the isle. Reynier,<sup>d</sup> on this question as to the Asiatic origin of maize, refers to “the curious researches which have been published in the ‘Bibliothèque Physico économique’ (An. 1818, t. iv. p. 234 of the new translation), where the author cites botanists contemporary with the discovery of America, who speak of maize as recently imported from Asia Minor.” It might thus be collected that maize is a product common to the Old and the New World, and not derived from the latter to the former.

*Millet*, which is cultivated not only in the East, but in the south of Europe, as an esculent grain, is raised to some considerable extent in Palestine and Syria. This plant rises with a reed-like channelled stalk, from three to four feet high: at every joint there is one seed-like leaf, joined on the top of the sheath, which embraces and covers that joint of the sheath below

<sup>a</sup> See Girard, as before.<sup>b</sup> ‘Topography of Thebes,’ 213, 214.<sup>c</sup> Ibid. p. 11.<sup>d</sup> De l’Economie Publique et Rurale des Arabes et des Juifs. 1820.

[Millet. *Panicum Milaceum.*]

the leaf, and is clothed with soft leaves. The stalk is terminated by a large loose panicle, hanging on one side. The grain forms a useful article of human food in the countries favourable to its culture; poultry also are fond of it; and cattle are partial to its straw. There is no doubt that the culture of millet is of very ancient date both in Syria and Egypt. It has been disputed whether *millet* or *dourra* be the *dochan* (דוחן) of Ezek. iv. 9. Our translators decide for millet, and we are disposed to acquiesce in their opinion (supported as it is by Hiller and Celsius), although we doubt not that the *dourra* also was cultured.

*Rice* is an article of large consumption in Syria, as well as in other Asiatic countries; from its use in pillaus, which form the staple of the principal daily meal of the inhabitants. Although this grain is to some extent cultivated in Syria, the quantities produced are by no means equal to the demand. Even Damascus, in whose neighbourhood rice is cultivated, is obliged to import a large proportion of that which it consumes. The rice is chiefly imported from Egypt; but in 1836 and 1837 Aleppo received and consumed about five hundred and forty bags (each weighing seventy-five pounds) of rice from Great Britain.<sup>a</sup>

The rice-plant seems to be a native of India, whence it extended at a very early date over the continent of Asia, and eventually into the south of Europe. Indeed, there is reason to conclude that wherever the summer heat is powerful, steady, and long-continued, and where, at the same time, the plant can obtain either naturally or by art the moisture it requires, there it will grow and flourish: but heat and water it must have. The period of its introduction into Egypt and Western Asia is not with certainty known. Theophrastus only speaks of it as an alimentary plant of the Indians,<sup>b</sup> which renders it probable that it did not then exist in Egypt. Dioscorides only notices it as a plant, to the vegetation of which constant watering was needful,<sup>c</sup> without indicating the country in which its culture was established; but it may be remarked that although he says not that it grew in Egypt, where he lived, or in the neighbouring country of Syria, neither does he intimate that it was a product of distant countries, or was brought from them. Strabo, his contemporary, is more definite, stating that it was cultivated in the oases of the Desert inhabited by the Gramantes,<sup>d</sup> and also upon the banks of the Indus, and in the southern provinces of Syria.<sup>e</sup> The fact contained in this last testimony, which of course points to Palestine, is confirmed and illustrated by notices in the Mishna, which it would not be easy to refer to any other product than rice. Of all these passages the most decisive is one which distinguishes the rice cultivated in the country from that imported from abroad.<sup>f</sup> Besides other casuistical decisions in reference to its culture,<sup>g</sup> there is one which allows it to be watered and even gathered in the seventh, or sabbatic year, provided it had began to vegetate in the year preceding.<sup>h</sup> As there is not the least evidence

[Rice. *Oryza sativa.*]

the fact contained in this last testimony, which of course points to Palestine, is confirmed and illustrated by notices in the Mishna, which it would not be easy to refer to any other product than rice. Of all these passages the most decisive is one which distinguishes the rice cultivated in the country from that imported from abroad.<sup>f</sup> Besides other casuistical decisions in reference to its culture,<sup>g</sup> there is one which allows it to be watered and even gathered in the seventh, or sabbatic year, provided it had began to vegetate in the year preceding.<sup>h</sup> As there is not the least evidence

<sup>a</sup> Dr Bowring's Report, '96.<sup>b</sup> Theoph. 'Hist. Plant,' iv. 5.<sup>c</sup> Dios. 'Hist. Plant,' ii. 117.<sup>d</sup> Strabo, Geog. lib. xvii. ad fin.<sup>e</sup> Ibid. lib. xvi.<sup>f</sup> Mishna, tit. Demai, cap. ii. sec. 1.<sup>g</sup> Mishna, tit. Peah, cap. viii. sec. 3; tit. Challa, cap. i. sec. 4; tit. Bava-mezia, cap. iii. sec. 7.<sup>h</sup> Mishna, tit. Shee'vith, cap. ii. sects. 7. 10.

that the Hebrews had any knowledge of rice before the Babylonian captivity, it is more than probable that, on their return, they brought the culture with them from the banks of the Euphrates—on the lower and marshy parts of which river it is still cultivated with much facility and success. But there is no likelihood that this important grain was ever cultivated to any considerable extent in a country generally so dry as Palestine. The culture seems to have been concentrated in certain districts—probably the same in which it is still found.

The figure which we have given must supply the place of a description of the plant. It is only necessary to add that the panicle which it exhibits is supported on a stalk more thick and hard, and also taller than that of corn.

We know nothing of the process of culture in Syria. It is doubtless much the same as in Egypt, allowing for the difference that during a portion of the time it remains in the ground it is *naturally* watered in Egypt by the inundation of the Nile, but in Syria by rains. In both countries it requires much artificial irrigation when these sources fail.

The seed is sown in April. It is previously well soaked, and then spread upon mats in the sun. The action of the heat upon the moistened grain accelerates the germination; and it is only when the germ is developed that the seed is committed to the earth, which has previously been laid under water for several days, and laboured, so as to bring it to the state of slush or mud, to which the grain is committed. Towards the end of July the rice is transplanted—generally to grounds from which the corn has lately been reaped, but which have since been ploughed and soaked for the rice; and which are generally as near as may be to the ground from which the plant is taken. In transplanting, the plants are distributed over twice the extent of ground in which they first grew. The harvest is in November; when the plant has been altogether seven months in the ground. It is cut down by the scythe, like corn; and, as with corn, the grain is separated by the wain, or *norreg*. The straw is used in Egypt for fuel.

The further process to which the rice is subjected before it is brought to the state in which it is used for food (in the East), may be described in the language of Hasselquist:—"It is pounded by hollow iron pestles, of a cylindrical form, an inch in diameter, lifted up by a wheel worked by oxen. A person sitting between the two pestles pushes forward the rice when the pestles are rising. In this manner they continue working it until it is entirely free from chaff and husks. When it is clean they add a thirty-eighth part of salt, and pound them together, by which the rice becomes white, which before was grey. After this fineing it is passed through a fine sieve, to part the salt from the rice, and then it is ready for use." To this statement we have only to add that families often purchase a stock of rice before it has undergone this process, and hire two men (or even women), whose trade it is, to come and pound it at the house. This is done with heavy wooden pestles, worked by manual labour, in wooden mortars. This operation (with the subsequent sifting) is often witnessed by a traveller in the East.

**ESCULENT VEGETABLES.**—This month we shall devote this section to the collective notice of such leguminous plants as have not already engaged our particular attention, regardless of the place they might severally occupy in the monthly routine.

*Lentiles*,<sup>a</sup> the early use of which for food is indicated in several passages of Scripture,<sup>b</sup> as well as by the paintings of Egypt.<sup>c</sup> From these sources we also gather that their principal use was for making pottage, which is still the case in Egypt and Palestine, in both which countries, and certainly in the former, lentiles constituted a great article of diet to the labouring classes, and in certain forms of preparation was not unacceptable at the best tables. Lentiles are too often mentioned by the ancient writers who speak of Egypt, to leave any doubt of the extent to which this useful pulse was cultivated; and of the excellence which it there attained, proof is given in the fact that the lentiles of Pelusium were esteemed both in Egypt and in foreign

<sup>a</sup> *Ervum lens*.

<sup>c</sup> See the cut in the History, at p. 574.

<sup>b</sup> Gen. xxv. 34; 2 Sam. xvii. 28. xxiii. 11; Ezek. iv. 9.



[Lentiles. *Ervum lens*.]

*Chick Peas* <sup>g</sup> are common enough in Palestine and Egypt. We know it was one of the ancient products of the latter country,<sup>h</sup> and probably was so of the former. Reynier thinks it may very well have been the *ketzach* (קצח) of Isa. xxviii. 25, 27, which we rather doubt.

The plant of the chick-pea raises its erect, leafy, and branched stem, to the height of a foot or eighteen inches, and bears an inflated two-seeded pod with tuberculated seeds. The seeds are remarkable for their resemblance to a ram's head; and, although generally unpalatable to northern Europeans, they form a prized article of food in the East and in some parts of southern Europe. They are eaten raw or boiled. "The most remarkable circumstance about *Cicer arietanum* is, that during the heats of summer its leaves and stem exude little viscid drops, which, on evaporation, leave behind crystals of nearly pure oxalic acid. Its grateful refrigerating qualities are owing to this acid. Persons who walk through the fields where it grows, with common leather shoes, find them destroyed by the acid."<sup>i</sup>

The cicer plant remains seven months in the ground. It is plucked up by the roots, and threshed by the *norreg*. Besides the constant use of this pulse by the peasantry, it is usual in the principal towns of Egypt and Syria to roast the grains over the fire in a large basin, and to eat them when properly parched.

countries.<sup>a</sup> Large quantities of lentiles were exported from Alexandria to foreign lands.<sup>b</sup> In the Mishna mention is made of an esteemed species of Egyptian lentile, neither large or small;<sup>c</sup> and Pliny<sup>d</sup> mentions two Egyptian species, and takes occasion to remark<sup>e</sup> that the lentile likes best a red soil, and infers that it thence derived the colouring principle by which it imparted a red colour to the pottage made with it. This is interesting, as the first notice of lentiles in the Scriptures contains a distinct allusion to the red colour of the lentile pottage for which Esau sold his birthright. Correspondingly, it is reported by Dr. Shaw that lentiles dissolve easily, in boiling, into a mass, and form a pottage of a red or chocolate colour, much esteemed in Egypt and Western Asia.<sup>f</sup>

The lentiles remain about four months in the ground. When ripe, the plants are rooted up, if they have been sown along with other plants, as is sometimes done, but are cut down with the scythe, if growing by themselves. Lentiles are threshed, winnowed, and cleaned like corn.

[Chick Pea. *Cicer arietanum*.]<sup>a</sup> Virgil, *Georg.* i. 228; Martial, *xiii.* 9.<sup>c</sup> Mishna, *tit. Celim*, cap. xvii. sec. 8.<sup>f</sup> Shaw, i. 257.<sup>i</sup> Penny Cyclopædia, art. "CICER."<sup>b</sup> Augustin, *Comment in Psalm xlvi.*<sup>d</sup> 'Nat. Hist.' xviii. 12.<sup>e</sup> *Ibid.* 17.<sup>b</sup> Plin. 'Nat Hist.' xviii. 12.

What has been stated of the culture of chick-peas may be applied almost without restriction to *Lupins*,<sup>a</sup> fields of which have been noticed in Syria by various travellers. The culture is probably conducted on the principles and for the same purposes as in Egypt. It is there sown in November, and in about five months is ready for the scythe. The stems are too ligneous to be of service in finding cattle; but they are all the more serviceable for fuel, and for making a kind of charcoal which enters into the manufacture of gunpowder. The grains are beaten out with rods, or staves, a substitute for the flail of very ancient date in those countries.

That *Beans*<sup>b</sup> are cultivated in the country has already been more than once intimated. The extent of this cultivation in Palestine we have no means of knowing; but it has been shown that in Egypt the quantity raised is inferior only to that of wheat and dourra. In that country they are sown in November and reaped in the middle of February (three months and a half in the ground); but it seems that in Syria they may be had throughout the spring. The stalks are cut down with the scythe, and these are afterwards cut and crushed under the *norreg*, to fit them for the food of cattle—camels, oxen, and goats. The beans themselves, when sent to market, are often deprived of their skins, as is the case also with lentiles, by the action of two small mill-stones (if the phrase may be allowed) of clay dried in the sun. Beans were undoubtedly in use among the ancient Hebrews, being mentioned in some of the sacred books.<sup>c</sup> Basnage reports it as the sentiment of some of the Rabbins, that beans were not lawful to the priests, on account of their being considered the appropriate food of mourning and affliction.<sup>d</sup> If this notion were really entertained, of the unlawfulness of beans to sacred persons, it was probably derived from the Pythagorean philosophy, the principles of which were adopted to a considerable extent by the later Jews. But we doubt that any such notion existed anywhere in Israel. Basnage does not refer to the authority; and neither in the sacred books nor in the Mishna can be found any traces of the notion to which he alludes. So far from attaching any sort of impurity to this legume, it is described as among the first-fruit offerings;<sup>e</sup> and several other articles in that collection prove that the Hebrews had beans largely in use, after they had passed them through the mill.<sup>f</sup>

*Fenugreek*,<sup>g</sup> called *helbeh* in Syria and Egypt, is among the plants often noticed by travellers in the latter country; but we have not been able to ascertain whether it is there cultivated for food, as it is in middle Egypt to an extent inferior only to that of maize.<sup>h</sup> The *helbeh* is correctly described in Dr. Bowring's 'Report on Egypt,' as "a seed with a somewhat bitter taste, whose flour is mixed with dourra by the fellahs." The stalks, cut and broken by the "wain," or "sledge," serve for the food of camels.

There would seem to be a second gathering of cucurbitaceæ in this month. Russell<sup>i</sup> says that young cucumbers are brought to market in September for the purpose of pickling; and Polschnitz<sup>k</sup> affirms that he saw in the neighbourhood of Rama (or Ramla) a species of melon, called by the Arabs *batieçæ*,<sup>l</sup> which was not yet gathered. From this we conclude that cucumbers and melons are sown twice in the year, as in Egypt, where the periods of sowing are March and July.

**PLANTS.**—As we consider that all the crops are off the ground in September, with the exception of a few which are delayed to the early part of October, we will proceed to notice the *oil-plants*, or those which afford oil, and for which they are more or less cultivated.

First, there is the *Sesame*,<sup>m</sup> a plant of summer culture, along with the dourra and maize, after the barley has been harvested. In Egypt it is ripe at the end of October after having been five months in the ground. When cut down, it is carried to the threshing-floor, and there exposed in the sun until thoroughly dry, when the grain is beaten out with rods. Some-

<sup>a</sup> *Lupinus termis*.

<sup>b</sup> *Vicia faba equina*.

<sup>c</sup> 2 Sam. xvii. 18; Ezek. iv. 9.

<sup>d</sup> Hist. des Juifs, liv. iv. chap. 31.

<sup>e</sup> Mishna, tit. Orla. cap. ii. sec. 7.

<sup>f</sup> Mishna, tit. Maaseroth, cap. v. 8, et passim; tit. Eduith. cap. iii. 8.

<sup>g</sup> *Trigonella fœnum Græcum*.

<sup>h</sup> Maize, 160,000 ardebs; helbeh, 110,000.

<sup>i</sup> Nat. Hist. i. 91.

<sup>k</sup> Theil, ii. p. 26.

<sup>l</sup> A curious way this of spelling an Arabic word. But we may recognise in it the Arabic word (*batykh*) for a melon in general, and not for any particular species—which is always denoted by an addition.

<sup>m</sup> *Sesamum Orientale*.



[Sesamum Orientale]

and to millet, that it might be attended to and gathered in the sabbatic year provided it had begun to vegetate before the end of the year preceding.<sup>c</sup> It is observable that, according to Russell, the *seerige* oil is now much used by the Jews of Syria in their cookery, although it is disagreeable in taste and smell to a European, and even to the Asiatics, if we may judge from the fact that although it is eaten by some mixed with the inspissated juice of the grape, called *dibs*, very few besides the Jews employ it in place of olive-oil.

From Talmudical sources we learn that the *Castor-Oil* plant<sup>d</sup> was reckoned among those plants whose oil was used in lamps. No notice is taken of its medicinal properties; and it is remarkable that those properties are also unknown to the present inhabitants of Syria and Egypt, or are, at least, not so appreciated as to form an object in the culture of the plant.<sup>e</sup> Its ancient culture in Syria and Egypt is undoubted. It is one of the plants whose nature, or rather developments, are much affected by climate and situation. Pliny, speaking of it as in Egypt, calls it a *tree*, from whose seeds a lamp-oil was extracted. We know not whether the form of its growth entitles it now in the same country to that designation; but we know that in some parts of Africa, and in the warm plains of the Arabian Irak, it attains the stature of a tree, and is not, as with us, a biennial plant, but endures for many years. Its life and growth are variously diminished by more or less congenial climates.

Among the plants cultivated from the oil which may be drawn from them are the *Coleseed*, or purple field-cabbage,<sup>f</sup> and the lettuce;<sup>g</sup> both were anciently applied to this use in Egypt,<sup>h</sup> and the former certainly (and probably both), in Palestine; for it is named among those plants from which a lamp oil was obtained.<sup>i</sup>



[Ricinus Communis.]

times the plants are tied up in bundles, and suspended from a line to dry. The *seerig*, as the oil expressed from this grain is called, is reckoned the best lamp-oil. It is also used in the kitchen, but is considered of inferior flavour to that extracted from the lettuce, though of greater value. The residue of the pressed seed, after the oil is extracted, is eaten by the peasants, and to some extent by the townspeople, and sold under the name of *koosbeh*. The unbruised seeds are strewed upon cakes, and give their name and flower to a coarse conserve.<sup>a</sup> The stalks are used for fuel.

Sesame was cultivated by the old Hebrews; and to the dietetic use of its oil, they added its employment to give light.<sup>b</sup> In the casuistical decisions of the Hebrew doctors, the same accommodating rule was extended to it as to rice

<sup>a</sup> Girard, 'Mémoire,' &c. p. 92—94; Wilkinson's 'Topography of Thebes,' 221.

<sup>c</sup> Mishna, tit. Sheevith, cap. ii. 7.

<sup>e</sup> So testifies Wilkinson for Egypt in 'Topography of Thebes,' 211; and Russell for Syria, vol. i. p. 80.

<sup>f</sup> *Brassica arvensis*.

<sup>g</sup> *Lactuca sativa*.

<sup>h</sup> Mishna, tit. Shabbah, ii. sects. 1 and 2.

<sup>b</sup> Mishna, tit. Shabbah, cap. ii. 2.

<sup>d</sup> *Ricinus Communis*.

<sup>i</sup> Plinii Nat. Hist. lib. v. cap. 7.

The *selgam*, as the natives name the coleseed, remains three months in the ground, and is then rooted up. The seed is beaten out with staves. The root of the plant is only used for fuel, and is of so little value as such, that the cultivator generally leaves it on the threshing-floor for the use of the poor. As for the *lettuce*, when the plant is cultivated for oil, its head, charged with the seed, is cut off when it reaches maturity, and is taken to the threshing-floor, where, after being exposed to dry during six days, the grain is beaten out as with coleseed. A part of the stalks or leaves of the plant are commonly taken off, during the growth, to feed cattle, without in the least diminishing the production of seed. The dry plant is also sometimes given to oxen for fodder, but as such is but little esteemed.

The *Safflower*,<sup>a</sup> or bastard saffron, may take its place here among oleiferous plants, for a considerable quantity of oil is extracted from it in Egypt, if not in Syria, although in both countries the plant is chiefly cultivated for the flowers, for their use in dyeing. The beautiful and somewhat fugitive rose-colour which is obtained from this plant, is well known; as is also the red pigment which is obtained from the stamens, which is used by painters, and known as a cosmetic rouge under the name of Spanish vermilion. The quantity produced in Syria affords no surplus for exportation, and is consumed in the country chiefly in colouring rice *pillaus* and other eatables. The quality is very inferior to that of Egypt,<sup>b</sup> where the plant was cultivated in very ancient times, and where it still receives much attention. When the plants come into flower they are visited every morning about sunrise, by women and children, who pluck the petals of the flowers which are sufficiently developed. The petals thus collected are spread out upon mats, in the shade, for a whole day, after which they are brayed in a wooded mortar, until reduced to a paste, to which the form of flat round cakes is given. Sometimes the flour of lupins is mixed with the safflowers, but although, as intended, consistence is thus given to the paste, the drug is thereby deteriorated in quality and value. The cakes are left to dry in the shade for about fifteen days, during which they lose about a moiety of their original weight.<sup>c</sup>

Having insensibly slid into the notice of plants from which dyes are obtained, we will preserve the connection by stating what else we know on this class of plants, beyond what has been formerly stated.

“*Indigo* grows wild in several parts of Palestine. I am not aware that any attention has been paid to its culture or collection.” This is Dr. Bowring’s report respecting indigo. It appears, however, that some attention is paid to its culture. Burckhardt intimates<sup>d</sup> that indigo dyeing is one of the principal occupations of the people of Szaftad (or Safet); a fact of no consequence in itself; but we elsewhere<sup>e</sup> learn that indigo is a very common product of “the Ghor,”<sup>f</sup> the inhabitants of which sell it to the merchants of Jerusalem and Hebron, where it is worth twenty per cent. more than the indigo of Egypt. It is also cultivated on the borders of the Lake of Tiberias;<sup>g</sup> so that it appears that the warm valley of



[Indigo Harvest. West Indies.]

<sup>a</sup> *Carthamus tinctorius*.

<sup>b</sup> Dr. Bowring’s ‘Report on Syria,’ 32.

<sup>c</sup> Girard, xvii. 94—98.

<sup>d</sup> ‘Syria,’ 317.

<sup>e</sup> *Ibid.* 392.

<sup>f</sup> Understood here of the low plain between the eastern brink of the Dead Sea and the mountains which on that side hem it in.

<sup>g</sup> Seetzen, 12.

the Jordan is, as might be expected, the part of Palestine the most favourable to the culture of this tropical plant. Volney indeed alleges that on the banks of that river, about Bysan, the indigo plant grows without cultivation, and adds that it only requires care to make it of an excellent quality.<sup>a</sup> This it actually is when cultivated, as evinced by its superior value in the market over Egyptian indigo. Perhaps (but we have no evidence on the point) this superior value may be partly owing to some superiority in the preparation, which is very defective in Egypt, where, as Belzoni informs us, the manufacturers make it up into cakes, of the size of sea-biscuits, in a very rough manner; for, not knowing how to extract the colour from the plant without mixing it with sand, the cake glitters all over, the light being reflected from every particle. But, apart from any reference to this, there is so acknowledged a superiority in the Syrian plant, that the cultivator in Egypt almost invariably sows his grounds with seeds imported from Syria, as it is found by experience that the seed obtained from the plants in Egypt is of very inferior quality.<sup>b</sup> In other words, the indigo plant degenerates in Egypt.

It appears from various evidence, not necessary to adduce, that the indigo itself was known both in Syria and Egypt, as a product imported from the East, long before the culture of the plant itself was introduced. The greatest quantity is produced at Nebk, and a small quantity in the plains of Homs and Hamah. The whole produce is calculated at seventy to eighty cantars by the year.<sup>c</sup> The epoch of its introduction it would not be easy to determine. In the time of Pliny, the Romans, although they had long been the masters of Syria, only knew indigo as an importation from the far east, and professed to know nothing of the plant.<sup>d</sup> But it would be unsafe to rely exclusively upon the ignorance of the Romans, who were a singularly unobservant people. The positive testimony of the Mishna is of greater importance; and that has a number of decisions relating to this plant, the most important and conclusive of which is one which forbids the destruction of an indigo plantation before it has completed its third year.<sup>e</sup> To this may be added the later testimony of Abulfeda,<sup>f</sup> who states that in his time the culture of indigo was much extended in the neighbourhood of Jericho. Considering all the circumstances which have been stated, it is more than probable that Egypt received the plant from Syria, although the respective dates of its introduction into those countries cannot now be ascertained.

*Madder*<sup>g</sup> grows abundantly and almost without cultivation in different parts of Syria and Palestine; nor does any reason appear beyond the generally backward state of all agriculture in the country, why this valuable root should not be very abundantly produced. It is cultivated in the Aleppo district, and somewhat more extensively in that of Damascus. The dye from the madder-root was certainly in very common use among the Egyptians, and doubtless also among the Hebrews. The reddish-coloured dye of the mummy-cloths appears to have been produced from madder, and affords curious and interesting monuments of its use. It is, from this instance, obvious, however, that their manipulations were very imperfect.

## OCTOBER.

**WEATHER.**—Until the fall of the second rains, in this month, the weather is serene, cool, and rather more pleasant than at any other time of the year. These second rains are in some measure regulated by those of September, the usual interval between them being from twenty to thirty days. Like those also, the quantity varies considerably in different years; but the second rains are generally more copious than the first, and descend in heavy interrupted showers three or four days successively.

The winds are commonly variable, and seldom blow fresh.

The greatest height of temperature marked by the thermometer is eighty-four degrees, the least fifty-one degrees; the greatest difference in any one day is ten degrees. The morning station of the thermometer, till the fall of the second rains (being higher than in the end of

<sup>a</sup> Volney, l. 395.

<sup>d</sup> Nat. Hist. xxxv. 27.

<sup>g</sup> *Rubia Tinctorum*.

<sup>b</sup> Girard, xvii. 109.

<sup>e</sup> Mishna, tit. Ki'aim. c. ii. sec. 5.

<sup>c</sup> Dr. Browning's 'Report,' 17.

<sup>f</sup> Tab. Syriæ, p. 96.

September), is usually about seventy-two degrees : the common difference in the afternoon is five or six degrees ; after the rains the mercury gradually sinks in the morning to sixty degrees ; the difference in the afternoon is then seldom more than three or four degrees, and still less when it rains.

The above is Dr. Russell's report on the weather at Aleppo in October, and its general applicability to Palestine is evinced by the incidental notices by the *principal* travellers of this month, some of whose more interesting statements we proceed to note.

The night-dews are very heavy in October ; and the higher regions are not unfrequently enveloped in mists in the morning.<sup>a</sup> It would seem to be not a rare thing for the plains of the Jordan, and those east of that river and of Anti-Libanus, to be unvisited by rain up to the middle of this month. The Rev. J. Paxton, travelling in the plains of Jericho and its vicinities between the 10th and 15th, observes that not a shower of rain had fallen for six months, in consequence of which the whole country had a parched and chapped appearance.<sup>b</sup> Mr. Addison, about the same season of another year, makes precisely the same observation with reference to the desert plains around Damascus ;<sup>c</sup> but the climate of that city itself is in this season delightful. Towards the *end* of the month, Paxton, sleeping at night in an open court in the town of Tiberias, observes that the air was mild, and there was no fear of rain ;<sup>d</sup> but we must remember *where* this was. Travellers in other parts describe the night-air as more or less chill according to the height and situation. On the other hand, the heat at mid-day, in clear weather, is still very strong.<sup>e</sup>

From the result of numerous observations it would seem that the autumnal rains should in Palestine be referred to October and November, rather than to September and October, as in northern Syria and Natolia. Indeed this is the amount of Korte's express testimony.<sup>f</sup> Tschudis also fixes the commencement of the rainy season to this month ;<sup>g</sup> and Cotovic first experienced rain on the 21st at Hebron, and Rheinfelder about the same time near Cæsarea.<sup>h</sup> The rains are sometimes accompanied with thunder.

**TREES.**—The Pistachio-tree is the only one, not noticed in preceding months, which now requires our attention ; for it is now laden with fruit. It is not much cultivated in Palestine, although found there growing wild in some very remarkable positions, as on Mount Tabor, and on the summit of Mount Attarous (Nebo?).<sup>i</sup> In more northern parts of Syria considerable attention is paid to it, particularly in the neighbourhood. It is with a primary reference to it as growing there, that it is described by Russell, whose account is by much the best which we possess, and which is doubtless sufficiently applicable to its growth and partial culture in Palestine.

The tree is of the same genus with the terebinth. The fruit (nuts) which it produces in Syria are very far superior to those which it affords in any other quarter. It was from Syria that the tree was introduced into Italy, by Lucius Vitellius, in the reign of Tiberius ;<sup>k</sup> and Galen<sup>l</sup> mentions Berrhœa (Aleppo) as being famous for this fruit



[Pistachio-Tree. *Pistacia vera*.]

<sup>a</sup> Monconys, 297 ; Jowett, ii. 113 ; Robinson, ii. 27 ; Addison, ii. 248.

<sup>d</sup> Paxton, 178.

<sup>f</sup> Korte, 150, 278, 426.

<sup>i</sup> Burckhardt, 334.

<sup>c</sup> Addison, ii. 75 ; Jowett, ii. 113 ; Le Bruyn, ii. 152 ;

<sup>g</sup> Tschudis, 236.

<sup>k</sup> Pliny, xiii. 5 ; xv. 24.

<sup>b</sup> Paxton, 156.

<sup>e</sup> Addison, ii. 152.

<sup>h</sup> Korte, 257 ; Cotovic, 137, 130 ; Shulze, 459.

<sup>l</sup> Cotovic, 242 ; Rheinfelder, 50.

De Aliment. Facult. lib ii. c. 30.

in his time. Now, besides a considerable consumption of them at home, large quantities are exported to Europe. The fruit loses much of its beauty by drying, but perhaps improves in flavour. The tree, when laden with clusters of the ripe smooth nuts, of a beautiful pale bluish colour, makes a fine appearance; but at other times is far from being handsome, its branches being remarkably subdivided and crooked. It seldom exceeds thirty feet in height, and often not more than twenty. The trunk, which is proportionably short, is about three, or about three feet and a half in circumference. The female tree, when not ingrafted, bears a small nut of little value. The pistachio-nuts are of various sizes. The kernel is alike green in all; but the outer husk is of different colours, from almost entirely white to a red; but these two colours are commonly blended, and the varieties are produced by engraftment.

The pistachio delights in a dry soil. As the male and female flowers grow on separate trees, it is necessary for the fecundation of the nut, that a male should be planted at intervals among the female trees. In the back yard of a house belonging to an English gentleman at Aleppo, stood a very flourishing pistachio-tree, which was almost every year laden with nuts of the fairest appearance, but perpetually without kernels. Its solitary situation was considered by the gardeners as the only cause of this.<sup>a</sup>

VINE.—Considering this as the month of vintage, we have chosen under it to notice the subject somewhat at large. In this notice we shall make due use of the various Scriptural allusions to the vine and to its produce; which are so numerous, as amply to evince the extent and importance of its ancient cultivation, and that Palestine was formerly, as to some extent it still is, a land of corn and the grape. One preliminary observation is needful, with respect to the comparatively infrequency of the mention of grapes and raisins—the solid produce of the vine, as compared with wine, the liquid preparation—in our version of the Scriptures. The fact is that of the two words both rendered invariably by wine in our version, it is more than probable that one (תִּירוֹשׁ, *tirosh*) never does denote the liquid produce of the wine, and that the other, which is of more common occurrence, must be frequently understood of the grape rather than of wine.<sup>b</sup>

By a comparison of the numerous notices in the Scriptures, as well as in the various travellers, ancient and modern, it appears that any part of Palestine was favourable to the culture of the vine, unless the low and hot valley of the Jordan be excepted, for in that we find no notice of its growth. It is there wanting (if wanting) probably for the same reasons which occasion its absence in the greater part of Egypt. With this exception, and with the limitations that the vine appears to be less abundant, and the grape less perfect, on the plain along the coast, than on the hills and in the valleys of the interior, the vine was anciently, and is to this day, produced abundantly from the northernmost

<sup>a</sup> Russell, i. 83.

<sup>b</sup> With reference to this matter we have received a communication from a learned correspondent at Birmingham, which, as we are disposed to concur in its statements, we cannot do better than here introduce. With the view of reminding us to notice this circumstance when we should come (as now) to treat of the vintage, he remarks:—

" The three words,	<table border="0" style="border-left: 1px solid black; border-right: 1px solid black;"> <tr> <td style="padding: 0 5px;">דָּגָן</td> <td style="padding: 0 5px;"><i>dagan,</i></td> </tr> <tr> <td style="padding: 0 5px;">תִּירוֹשׁ</td> <td style="padding: 0 5px;"><i>tirosh,</i> and</td> </tr> <tr> <td style="padding: 0 5px;">יִצְהָר</td> <td style="padding: 0 5px;"><i>yitzhar,</i></td> </tr> </table>	דָּגָן	<i>dagan,</i>	תִּירוֹשׁ	<i>tirosh,</i> and	יִצְהָר	<i>yitzhar,</i>	} rendered in our Bibles as	{	corn, sometimes wheat; wine, sometimes new or sweet wine; oil,
דָּגָן	<i>dagan,</i>									
תִּירוֹשׁ	<i>tirosh,</i> and									
יִצְהָר	<i>yitzhar,</i>									

mean respectively,—the first, all kinds of corn, as wheat, barley, oats, rye, millet, &c. The second, the solid produce of the vine, as grapes, whether moist or dried, or "the produce of the vine in general." The third, all kinds of other fruits not comprised under *tirosh*, capable of being preserved and serving for food throughout the best parts of the year, as dates, figs, olives, pomegranates, citrons, oranges perhaps, &c. &c.

"The three terms in fact included nearly everything in the shape of vegetable produce which the Jews had either for subsistence or luxury, and are so used as indicative of the great goodness of the Lord, either as promised blessings, or as such as having been already given are threatened to be taken away for disobedience, and the practice of our translators has the effect of curtailing the idea of the beneficence of the Almighty, by cutting down the interpretation of them (the two last always) to two specific articles, such as wine and oil.

"There are some instances also, in which it seems to me that the term יַיִן *yayin* should have been rendered in the sense that Cato sometimes uses the word *vinum*, viz. grapes rather than wine. It seems to me that grapes must have formed in Palestine an important article of food, full as deserving of occasional mention in the Bible, though our translation speaks of 'wine' above two hundred times, and of 'grapes' less than thirty times."

heights of Lebanon to the southernmost cultivable limits of Judea. The latter province, however, would appear to have been that which claimed consideration for the superior quality of the fruit. There is an early allusion to this, in Jacob's blessing to Judah;<sup>a</sup> and the most celebrated vine localities to which the sacred books refer, Eshcol and Sorek, were within its limits. As the Moslem inhabitants of the country are forbidden to drink wine or to make it for sale for those who do not labour under the same restriction; and as *all* agriculture is checked and discouraged by a very deficient population, we may easily conceive that the aspect of the country, as to this branch of culture, is very different to what it was in ancient times when the land was thronged with industrious inhabitants, devoted to agriculture, and specially encouraged to the culture of the vine and to the use of its products. This is still more apparent when we discover that, under all discouragements, the vine still maintains its *relative* rank among the principal products of the country: for greatly as its culture has declined, its decline has not been in much disproportion to that of other productions of the country; for although the Moslems drink not wine, they have great enjoyment in the fruit; while the Christian inhabitants (especially in Lebanon) cultivated it not only for this, but for wine, which they make for their own use and for exportation.

The ancient abundance of the vines in Palestine and Syria, and the excellent quality of the wines which they afforded, is celebrated from various quarters.<sup>b</sup> And as wine was interdicted only to the Nazarites during the continuance of their vow, and to the priesthood during their actual service at the temple, it is not surprising if the fine qualities of the wines, and the facility with which they might be obtained, offered some temptation to the abuse of the benefit. This is intimated by the earnestness and frequency with which the prophets dehort the people from excess in the use of wine.<sup>c</sup>

It appears that the Hebrews had different methods of cultivating the vine, and doubtless the difference of the localities determine their adoption. It appears that the hill sides were principally devoted to this culture, and that care was taken, as now, to bank up with stones successive ascending terraces to arrest and confine the soil.<sup>d</sup> It was to the construction of such *embankments* that the stones were applied, and not always, as our translators have understood, to "hedges" in the usual sense of that term. The construction and repair of these embankments was a matter of so much importance that, by a rare exception, the traditions which in general rather increased than lessened the rigour of the written law, allowed labour to be expended on them during the Sabbatic year;<sup>e</sup> and of so much importance was their preservation that their destruction supplies to the prophet <sup>f</sup>a strong but appropriate figure of national calamity and desolation. It was in these situations particularly that the vines were kept growing low; and as these were the more common circumstances of its position, this was the most prevalent mode of growth.<sup>g</sup> The wines obtained from vines thus cultivated are found to be superior to those from high growing vines; and this probably supplies the reason that such were not admitted for oblations; and even among the wines from low vines, it was directed that a preference should be given to those of particular localities which were the most distinguished for their excellent fruit.<sup>h</sup> This regulation shows that the Hebrews cultivated tall vines also; and this is confirmed by other testimonies. They were trained up the trees, or on erect palisades of wood, or upon trellises of reeds.<sup>i</sup> Sometimes they were sustained upon long poles, connected by bands of osier upon which the branches extended across the intervals.<sup>k</sup>

The different physical constitution of the two countries rendered the practice which was least usual in Palestine the most common in Egypt. In the latter country the most usual method was to train the vines in bowers, or in avenues formed by rafters and columns. There the vines never appear to have been trained to trees; but sometimes, although rarely, they were

<sup>a</sup> Gen. xlix. 11.

<sup>b</sup> See Ezek. xxvii. 18; Hos. xiv. 7; Herod. iii. 6; Athen. lib. i.; Strabo, lib. xvi; Pliny, lib. xv. cap. 9.

<sup>c</sup> Prov. xxxi. 4, 5; Isa. v. 11, 22; xxviii. 7; Hos. iii. 1, &c.

<sup>d</sup> Isa. v. 1; Jer. xxxi. 5; Amos, ix. 13.

<sup>e</sup> Mishna, tit. Shee'vith, vii. 6.

<sup>f</sup> Micah, i. 6.

<sup>g</sup> Pliny, xvii. 35. sec. 15.

<sup>h</sup> Mishna, tit. Menachoth, viii. 6.

<sup>i</sup> Mishna, tit. Kilaim, iv. 5 et 9; v. 3; vi. 1, *et seq.*; Bava-mezia, ix. 1; Bava-bathra, iii. 4, sec. 9, etc.

<sup>k</sup> Mishna, tit. Kilaim, vii. 1, 2; Bikurim, i. 1.



allowed to grow as standing bushes.<sup>a</sup> In the same country where the vineyard was enclosed within its own wall of circuit, it frequently had a reservoir of water attached to it, as well as the building which contained the wine-press.<sup>b</sup>

It will be seen how closely these various facts coincide with those passages of Scripture in which vineyards are with the most particularity described. To point that coincidence we here adduce them. The fullest information is conveyed in that very beautiful passage of Isaiah in which the nation of Israel as a church, is compared to a vineyard, Jehovah being the Lord thereof:—

“ My beloved had a vineyard  
On a high and fruitful hill :  
And he fenced it round, and he cleared it from the stones,  
And he planted it with the vine of Sorek ;  
And he built a tower in the midst of it,  
And he hewed out also a lake therein ;  
And he expected that it should bring forth grapes :  
But it brought forth poisonous berries.  
• • • • •  
But come now, and I will make known unto you  
What I purpose to do to my vineyard :  
To remove its hedge, and it shall be devoured,—  
To destroy its fence,<sup>c</sup> and it shall be trodden down :  
And I will make it a desolation ;  
It shall not be pruned, neither shall it be digged ;  
But the brier and the thorn shall spring up in it,  
And I will command the clouds  
That they shed no rain upon it.”<sup>d</sup>

Bishop Lowth thinks that in this case “ the tower” in the vineyard, which is also mentioned by our Saviour in his parable of the vineyard,<sup>e</sup> (the general idea of which coincides with this) means, “ The farm, as we may call it, of the vineyard, containing all the offices and implements, and the whole apparatus necessary for the culture of the vineyard and the making of the wine.” But we prefer the more usual interpretation which regards the tower as being designed for the keeper of the vineyard to watch and protect the fruits. This most consists with existing usages. Mr. Paxton notices the number and picturesque effect of the “ watch-houses, or little towers,” which appear in the vineyards on the hills near Bethlehem. “ Some of these are round and some square, made of stone, from ten to fifteen or twenty feet high. These serve as places from which a watch is kept on the vineyards during the season of the grape. It is common to watch in this way their gardens and fruit-trees, which otherwise might be liable to pillage.”<sup>f</sup> In Egypt, and doubtless in Palestine, great care was taken to protect the ripe clusters from the birds ; and boys were constantly employed about the season of vintage to frighten them with the sling, and by the sound of the voice.

Vines were propagated by layers,<sup>g</sup> and also by cuttings ; the stocks were improved by grafting.<sup>h</sup> Pruning is mentioned in the preceding extract from Isaiah. This important operation was tolerated in the Sabbatic year, but not so the dressing of the vine.<sup>i</sup>

The frequent expression in the Scripture which describes a state of safety and repose by the sitting of any man under the shade of his own fig-tree and *his own vine*, shows that the Hebrews had the same use of vine-arbours as existed among the ancient Egyptians, and which we still find in Syria. Besides what has been already stated as to the practice of the Egyptians, an interesting illustration may be derived from the Mosaic pavement at Præneste, where we see a trellissed vine-bower, under whose pleasant shade several persons sit on benches drinking wine and solacing themselves with music. At a village (Beitdjin) near Cæsarea, Shulze and his party took supper under a large vine, the stem of which was nearly a foot and a half in diameter, the height about thirty feet, and covered with its branches and shoots (for the shoots must be supported) a hut of more than fifty feet long and broad. The bunches

<sup>a</sup> Wilkinson, ii 147.

<sup>b</sup> Ibid, 148.

<sup>c</sup> Properly “ embankment,” for we have “ hedge” in the preceding line.

<sup>d</sup> Isa. v. 2, 3, 5, 6.—Lowth’s translation.

<sup>e</sup> Matt. xxi ; Mark xii.

<sup>f</sup> Paxton, 145.

<sup>g</sup> Mishna, tit. Kilaim, vit. sec. 1. 2 ; Bikurrim i. sec. 1.

<sup>h</sup> John xv. 1—4.

<sup>i</sup> Lev. xxv. 5 ; Mishna, tit. Shevith, ii. sec. 2.



[Vine Arbour.]

of the grapes were so large as to weigh ten or twelve pounds, and might be compared to our plums. Such a bunch is cut off and laid on the board, and each helps himself to as many as he pleases. Dr. Russell acquaints us<sup>a</sup> that “the large grapes produced in the houses, upon the vines that cover the stairs and arbours, are of beautiful appearance, but have little flavour.”

In Psalm lxxx we find the same favourite figure as that employed by Isaiah, and in its amplification some beautiful descriptions, with a little further information, occur:—

“A vine thou didst bring out of Egypt ;  
 Thou castedst out the nations and plantedst it.  
 Thou preparedst the ground for it ;  
 It spread its roots and filled the land.  
 The mountains were covered with its shade,  
 And with its tendrils the lofty cedars ;  
 Its boughs it extended to the sea,  
 And its branches to the great river.  
 Why hast thou broken down its fences  
 So that every passenger croppeth it ?  
 The boar from the forest wasteth it,  
 And the wild beasts of the field devour it.”

As the allusions here are to modes of culture which have already been noticed, no further elucidation is required. The use of fences is implied in the evils attending their destruction : for as the destruction of the embankments of the terraced hills involves the destruction of the vineyard by the action of the elements, so the ruin of the fences expose the vines to be spoiled by man and beast. Both these consequences are exhibited in connection, in the passage previously adduced from Isaiah.

The fences appear to have been, as they now are, of thorns and of stones.

Among the depredators on vines, mention is made of “the foxes—the little foxes,” which spoiled the vines when they had tender grapes, and which the vine-dressers were anxious to catch.<sup>b</sup>

It seems that the system under which the vineyards were once cultivated was in ancient

<sup>a</sup> Vol. i. p. 80.

<sup>b</sup> Sol. Song, ii. 15.

times much the same as that which now prevails in the same country; that is to say, when a man cultivated his own vineyard, he hired day-labourers (at the times when extra labour was required), whose wages, in the time of Christ, was seven-pence halfpenny by the day;<sup>a</sup> but extensive proprietors generally let out their vineyards when a certain proportion of the produce was given to the owner and another to the cultivator of the soil.<sup>b</sup> The general principles under which this system at present works has been exhibited in the note at p. cccviii. respecting the culture of silk. But the conditions somewhat vary as applied to other products. The proprietor is supposed to have the ground in perfect working condition when the bargain is made. Then, in the first instance, he advances a sum of money for whatever outlay may be necessary as to implements, animals, etc. From the product he first deducts ten, fifteen, or twenty per cent. according as (after ancient regulations) the ground is more or less taxed. The remainder is divided into two equal parts, one of which the proprietor takes, and the other is for the cultivators, the value of whose moiety is however reduced by the obligation to repay the money advanced to them at the outset.<sup>c</sup> Seed, when required by the nature of the cultivation, is always supplied by the proprietor. But some inconvenience in thus dividing the produce of the vine, appears to have suggested, as sometimes the better course, that the husbandman should keep all, and pay to the proprietor either a fixed rent or the value of his share in money. In Isaiah vii. 23, the rent for a thousand vines is said to have been "a thousand silverlings," or shekels, about half-a-crown each. From this, as compared with Solomon's Song, viii. 11, 12, we may collect that a shekel the vine was an ordinary rent, and also that vines were rented by the thousand, and sometimes perhaps to different tenants, in the same vineyard or estate where it contained several thousand vines. It would also appear that the cultivator received at the rate of twenty per cent., which is certainly less than the present proportion, in about the same degree as the difference in the day's wage of the ancient and modern husbandman, and, doubtless from the same cause, a redundant population in former times and a great want of inhabitants now.<sup>d</sup>

<sup>a</sup> Matt. xx. 2, *et seq.* Wages are now and always have been paid by the day in Syria and other eastern countries. This was indeed made obligatory upon the Hebrews by the Law of Moses. At present the nominal rate of wages for field-labour is higher, indeed about double that amount (five to six and a half piastres, or twelve to fourteen pence), but no doubt the price of food is now higher in the same proportion.

<sup>b</sup> Matt. xxi. 34.

<sup>c</sup> Dr. Bowring's 'Report,' 132.

<sup>d</sup> Dr. Bowring, as the result of different estimates, does not suppose the present population of Syria to exceed 1,500,000—that is; not nearly equal to the population of Scotland. In former times Palestine alone must have contained twice or thrice the population which all Syria now affords. This fact, by itself, would suffice to account for all the differences between the ancient and modern conditions of Syria in general, and of Palestine in particular. M. de Salle, the author of '*Peregrinations en Orient.*' in a paper lately read before the Académie des Sciences (inserted in 'The Times' newspaper for Oct. 12th, 1840), gives an estimate of the population agreeing with that of Dr. Bowring. He obtains his conclusion by comparing the results obtained by different travellers, as Dr. Bowring does by comparison of the various answers he received. Both acknowledge the uncertainty of their conclusions, but fairly state the data on which they are founded, and the coincidence in the result is remarkable. M. de Salle says, "At the time of the Arabian conquest the total population of Syria exceeded 6,000,000; and, judging by the importance of their towns, the influence of their emirs, and the resistance which they opposed to the Christians, the Syrians must still have been a numerous nation during the Crusades. So considerable however is the decrease in the present day that the Mussulman part of the population is inferior to the Christians." This we much doubt. But (unless he counts the Druses as Christians) M. de Salle probably means no more than that the non-Moslem exceed the Moslem inhabitants; and this all accounts confirm. However, we insert De Salle's estimate of the different classes of the population, and set opposite to it the estimate supplied to Dr. Bowring by Col. Campbell, who however estimates the population higher, even above 1,800,000, which, he says, the best informed people in the country divide as in his table:—

DE SALLE.		COLONEL CAMPBELL.	
Turks . . . . .	10,000	Mussulmans . . . . .	997,000
Mussulmans, Arabs, Syrians . . . . .	400,000	Ansaries (Bedouins) . . . . .	22,000
Eastern tribes of the Anti-Lebanon and left bank of the Jordan . . . . .	50,000	Mutualis and Yezidis . . . . .	17,000
Mutualis . . . . .	100,000	Druses . . . . .	48,000
Anzarians . . . . .	60,000	Catholics and Maronites . . . . .	260,000
Kourds and Turkomans . . . . .	15,000	Members of the Greek Church . . . . .	345,000
Druses . . . . .	300,000	Jews . . . . .	175,000
Jews . . . . .	20,000		
Maronites . . . . .	400,000		
Catholics, Greeks, Syrians, Armenians . . . . .	50,000		
Schismatic Catholics . . . . .	80,000		
Floating population of merchants and pilgrims . . . . .	40,000		
<b>Total . . . . .</b>	<b>1,525,000</b>	<b>Total . . . . .</b>	<b>1,864,000</b>

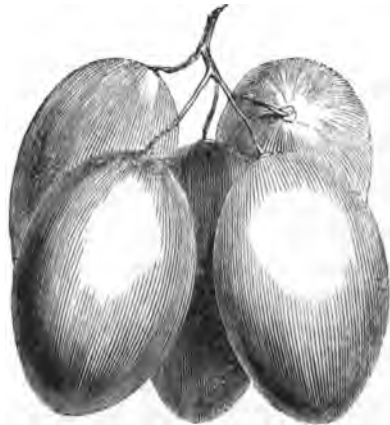
The passage alluded to describes king Solomon as letting his vineyard at Baal-hamon to tenants, each of whom paid a thousand shekels (125*l.*) for the fruit. Then follows a response by the bride, who appears to speak of another vineyard<sup>a</sup> which belonged to her, from which she obtained a rent of a thousand shekels [or perhaps a thousand from each of several tenants], while the husbandmen were allowed two hundred for their care and labour.

With reference to the culture of the vine in Palestine, the information thus brought together is more precise and important than can be obtained from modern sources respecting the present condition of this culture. And the little to be found only shows that the old practices are followed, with small variation. We shall, therefore, content ourselves with the following passage from Elliot. Alluding to the different methods for cultivating the vine in different countries, he says :—“ In our own country it is suffered to expand itself to any size, and nailed in regular lines to the wall or to the frame of a greenhouse ; thus a single tree will produce several hundred weight of grapes. On the banks of the Rhine the growth is limited to three feet in height, and each tree is supported in an upright position. In France it is formed into arches and ornamental alcoves. In Sardinia it assumes the aspect of a parasitical plant, luxuriating among the branches of the largest forest trees, and clasping with its tendrils the extreme twigs. In Asia Minor its wild festoons hang their green and purple pendants from rural bowers of trellis-work. On the heights of Lebanon it lies in a state of humiliation, covering the ground like the cucumber, and subsequently we saw it in the valley of Eschol, in a position different from all that have been named. These three vines, planted close together, and cut off at the height of five feet in the apex of a cone formed by their stems, where, being tied, each is supported by two others, and thus enabled to sustain the prodigious clusters for which that region has always been famous ; clusters so large, that, to carry one, the spies of Moses were compelled to place it on a stick borne by two men.<sup>b</sup> Each mode is doubtless the best that could be adopted in the quarter where it prevails, considering the nature of the soil and climate, the value of the land, and the object of the cultivator.”<sup>c</sup>

The latter observations are confirmed by Belon ; who adds, that the vines are planted in an orderly manner, and at such distances from each other that the plough may pass between them. The trunks of the vines are very thick, and the branches extensive. But in the vineyards near Jerusalem, he observes, the vines are planted without order, and grow without support.<sup>d</sup>

We submit, that although there are parts of Palestine in which grape-clusters, of a size which we should consider extraordinary, are produced, the manner in which the spies conveyed their samples, proves less its size than the care which was taken to carry it fresh and unbruised to the expectant Israelites. However, we now come to consider the size and quality of the grapes in Palestine.

And, in the first place, we may observe that the goodness of a grape is very far from being in the ratio of its size. On the contrary, Russell assures us that a small white grape is reckoned superior to any other in Syria, while, as we have before seen, a larger species is poor and of little flavour. No doubt there are vines in Palestine which produce extraordinarily large *grapes*, and others which afford remarkably large *clusters*. As to the former, we introduce a cut, copied from Laborde, showing the natural size of some of the grapes produced in that country. Nau affirms that he saw in the neighbourhood of Hebron,



[Palestine Grapes.]

<sup>a</sup> Some think it the same vineyard to which the preceding verse refers, and which had been transferred to her king and husband ; but for various minute reasons, needless to recapitulate here, we are disposed to think it a different vineyard.

<sup>b</sup> Num. xiii. 33.

<sup>c</sup> Elliot, ii. 261.

<sup>d</sup> Belon, 340, 341.

grapes as large as one's thumb.<sup>a</sup> Dandini, although an Italian, was astonished at the large size which grapes attained in Lebanon, being, he says, as large as prunes.<sup>b</sup> Mariti affirms that in different parts of Syria he had seen grapes of such extraordinary size that a bunch of them would be a sufficient burden for one man.<sup>c</sup> Neitzschutz states he could say with truth, that in the mountains of Israel he saw and had eaten from bunches of grapes that were half an ell long, and the grapes two joints of a finger in length. Paxton also, speaking of the vines around his summer residence at Bhadom in Lebanon, remarks that the grapes were of various kinds, most of them white and large.<sup>d</sup>

Then, as to the *clusters*, it is remarked by Nau that the size which they attain in some favourable situations in Syria astonishes those who have seen the fruit only in France and Italy. He affirms that he had seen clusters in Syria weighing ten or twelve pounds; and had heard that, in the Archipelago, clusters of thirty or forty pounds were not uncommon.<sup>e</sup> Morison makes a similar statement,<sup>f</sup> and Doubdan, travelling near Bethlehem, found himself in a most delightful valley, full of aromatic herbs and rose-bushes, and planted with vines. This was the traditionary vale of Eshcol, from which the clusters were obtained by the spies. The traveller indeed, not being there in the proper season, saw no such clusters, but he was assured by the monks that, even in the present neglected state of the country, they still found *some* weighing ten or twelve pounds.<sup>g</sup> The valley of Eshcol we would rather refer to the neighbourhood of Hebron, according to the ancient and modern traditions of the Jews, combined with good Scriptural probabilities. It was here that Nau saw his large grapes; and here the ground is still so well set with vineyards, that for miles on either hand nothing is seen on either side of the road to Hebron but a succession of vineyards, whose vines were laden with the most delicious grapes.<sup>h</sup>

Even in our own country, a bunch of *Syrian* grapes was produced at Welbeck, and sent as a present from the Duke of Portland to the Marquis of Rockingham, which weighed nineteen pounds. It was conveyed to its destination—more than twenty miles distant—on a staff by four labourers, two of whom bore it in rotation, thus affording a striking illustration of the proceeding of “the spies.” The greatest diameter of this cluster was nineteen inches and a half; its circumference four feet and a half; and its length nearly twenty-three inches.<sup>i</sup>

THE VINTAGE next requires our attention. This was a season of festivity and joy, of which it may be difficult to give an idea to the inhabitant of a country not of the vine, but by a reference to the old festivities of the corn harvest. The facts which may be collected from the Scripture concerning the vintage are very few. It amounts to this:—that the wine-press was a building, generally erected in the middle of the vineyard; its form we know not, but there were cisterns hewn in the rock, or formed with masonry and lined with cement, to receive the expressed juice.<sup>k</sup> In this press the grapes were trodden with the feet.<sup>l</sup> The wine was afterwards preserved in jars<sup>m</sup>—a usage still common on all the shores of the Mediterranean, unless where the art of cooperage has been received from the north. But as the fragility of these vessels precluded their removal, skin-bottles were employed for that purpose, and hence a frequent expression alludes to the bursting of such bottles from the working of new wine.<sup>n</sup>

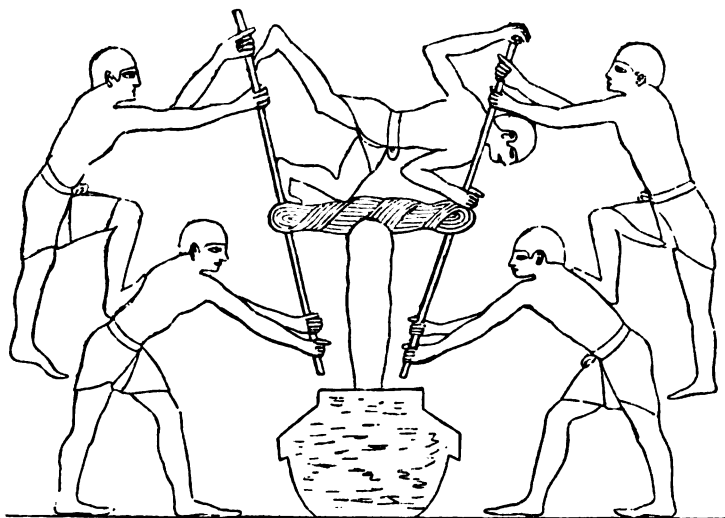
As far as these particulars go, they agree very precisely, as might be expected, with the information supplied by the ancient paintings of Egypt. The same agreement may therefore be expected to prevail in the *further* information derivable from this source, and which has been embodied by Sir J. G. Wilkinson in a statement which we shall now follow.

“When the grapes were gathered, the bunches were carefully put into deep wicker baskets, which men carried either upon their heads or shoulders, or slung upon a yoke, to the wine-

<sup>a</sup> Nau, 458.<sup>b</sup> Dandini, 79.<sup>c</sup> Mariti, iii. 134.<sup>d</sup> Paxton, 214.<sup>e</sup> Nau, 464.<sup>f</sup> Voyage, 493.<sup>g</sup> Doubdan, 23, 24.<sup>h</sup> Paxton, 136.<sup>i</sup> ‘Times Telescope,’ for 1819, p. 273.<sup>k</sup> Isa. v. 2.<sup>l</sup> Isa. xvi. 10; Jer. xlvi. 33.<sup>m</sup> Jorem. xlvi. 12.<sup>n</sup> Josh. ix. 4. 13; Job, xxxii. 19; Matt. ix. 17; and the parallel passages.

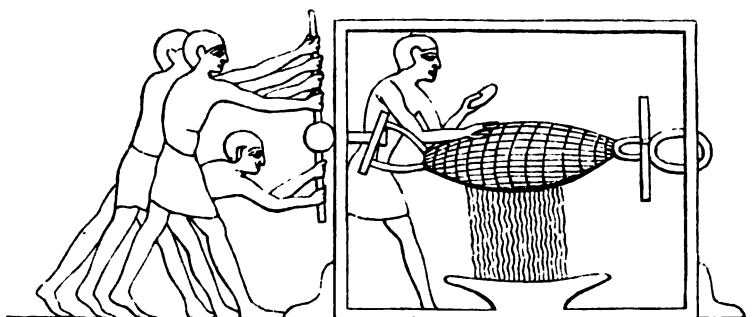
press; but when intended for eating, they were put, like other fruits, in flat open baskets, and generally covered with leaves of the palm, vine, and other trees.<sup>a</sup> These flat baskets were of wicker-work, and similar, no doubt, to those of the present day, used at Cairo for the same purpose, and which are made of osiers or common twigs.<sup>b</sup>

The wine-press was of different kinds. The most simple consisted merely of a bag, in which the grapes were put, and squeezed by means of two poles turning in contrary directions: a vase being placed below to receive the falling juice.<sup>c</sup> The mode of representing it in Egyptian sculpture is not very intelligible, or in accordance with our notions of perspective,



[Egyptian Wine-press. Rosellini.]

though we may easily understand that the man at the top of the picture is in the act of pushing the poles apart, in order to stretch the bag,<sup>d</sup> as a *finale* to the process, the poles



[Egyptian Wine-press. Rosellini.]

being at that time in a horizontal position, and opposite to each other. Another press, nearly on the same principle, consisted of a bag supported in a frame, having two upright sides,

<sup>a</sup> See the cut at p. ccxiii.

<sup>b</sup> It appears from the sculptures that monkeys were sometimes trained by the Egyptians to assist in gathering the fruit.

<sup>c</sup> Prior to the publication of Sir J. G. Wilkinson's book, the author of the present work declared his opinion, [See 'Pictorial Bible,' note on Neh. xiii.] that this squeezing in the bags was intended to exhibit a *second process*, to which the grapes were subjected for the more complete extraction of the juice that remained after the treading. The analogy of the subsisting usages in vine countries suggested this interpretation, to which we are still disposed to adhere. Indeed, its probability is, presently, admitted by Sir J. G. Wilkinson himself.

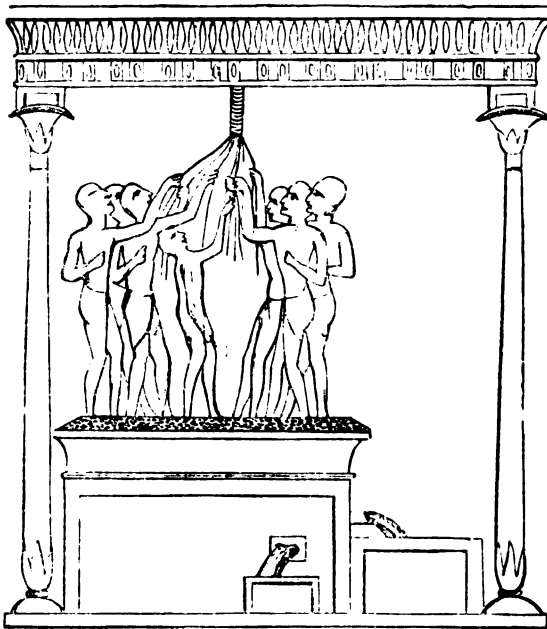
<sup>d</sup> It would be more reasonable to suppose that he pushed with his hands and one leg, while the other rested on the ground to support him.

connected by beams at their summit. In this the bag was retained in a horizontal position, one end fixed, the other passing through a hole in the opposite side, and was twisted by means of a rod turned with the hand: the juice, as in the former, being received into a vase beneath, and within the frame stood the superintendent, who regulated the quantity of pressure, and gave the signal to stop.

Sometimes a liquid was heated on the fire, and, having been well stirred, was poured into the sack containing the grapes during the process of pressure; but whether this was solely with a view of obtaining a greater quantity of juice, by moistening the husks, or was applied for any other, it is difficult to determine: the fact, however, of its being stirred while on the fire suffices to show it was not simple water; and the trituration of the fruit while it was poured upon it, may suggest its use in extracting the colouring matter for red wine.

The name *torcular*, by which the Romans designated their press, would not be inapplicable to such a mode of twisting or squeezing out the juice; but in this machine the grapes were crushed beneath a wooden beam (*prelum*), so that the process and principle were somewhat different; and we learn from Vitruvius that the Roman torcular was of two kinds, one turned by a screw, and the other by levers.

The two Egyptian hand-presses were used in all parts of the country, but principally in



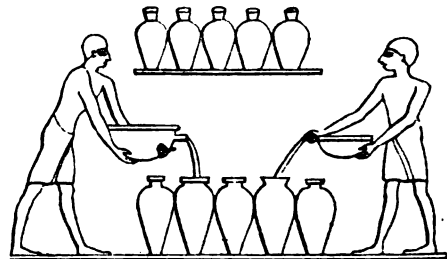
[Egyptian Wine-press.]

Lower Egypt, the grapes in the Thebaïd being generally pressed by the feet. The foot-press was also used in the lower country, and we even find the two methods of pressing the grapes represented in the same sculptures: it is not, therefore, impossible that, after being subjected to the foot, they may have undergone a second pressure in the twisted bag. This does not appear to have been the case in the Thebaïd, where the foot-press is always represented alone; and the juice was allowed to run off by a pipe directly to an open tank.

Some of the large presses were highly ornamented, and consisted of at least two distinct parts. The lower portion or vat (*lacus*), and the trough, where the men with naked feet trod the fruit, supporting themselves by ropes suspended from the roof, though from their great height some might be supposed to have an intermediate re-

servoir, which received the juice in its passage to the pipe, answering to the strainer or *colum* of the Romans.

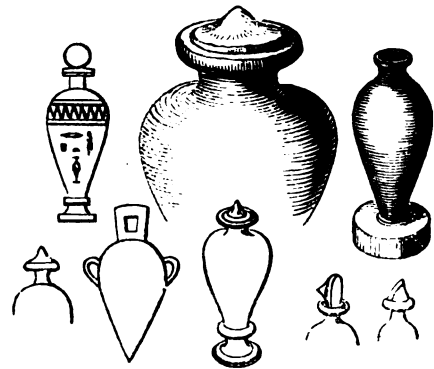
After the fermentation was over, the juice was taken out in small vases, with a long spout, and poured into earthenware jars, which corresponded to the *cadi* or *amphoræ* of the Romans, but whether anything was added to it after or previous to the fermentation it is difficult to determine, though, from our finding men represented in the sculptures pouring some liquid from a small cup into the lower reservoir, we may conclude that this was sometimes the case.



[The Wine poured into Jars.]

When the *must* was considered in a proper state, the amphoræ were closed with a lid resembling an inverted saucer, covered with liquid clay, pitch, gypsum, mortar, or other composition, which was stamped with a seal. They were then removed from the wine-house, and placed upright in the cellar.

The mode of arranging amphoræ in an Egyptian cellar, was similar to that adopted by the Greeks and Romans. They stood upright in successive rows, the innermost set resting against the wall. Sometimes each jar was secured by means of a stone ring, fitting round its pointed base, or was raised on a wooden stand; and from the position they were occasionally shown to have occupied, as in the annexed cut, we may

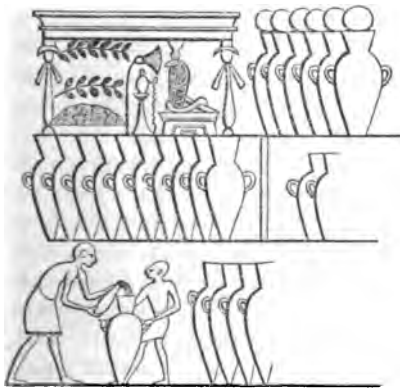


[Vessels closed and sealed.]

conclude that many were placed in an upper room, as the amphoræ in a Roman apotheca.

With respect to the removal of wine in skins although it was kept in jars, which has already been pointed out as a Hebrew custom, the paintings afford no illustration of it—nor, indeed, of the act of removing wine in any form; but that this was an Egyptian custom is shown by the well known story of Rhampsinitus in Herodotus. (ii. 121.)

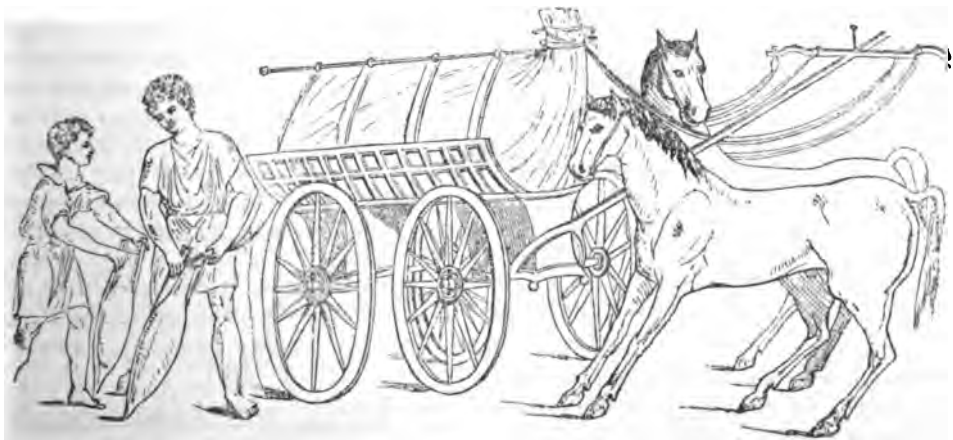
There are few undertakings more interesting than to trace the similarity or difference of the customs of ancient nations (or, indeed, of different modern nations, or, again, of ancient and modern nations) with reference to the same class of objects or pursuits. But this pleasure we may not now indulge further than to intimate that the ancient Hebrew



[Wine Jars in Store room.]

customs with reference to the vintage and its results, might also be illustrated from the sculptures of Greece and Rome. Among the paintings of Herculaneum, and in the mosaics of an old temple (supposed of Bacchus) at Rome, there are examples of wine-presses very similar to that of Egypt. But on this subject we can only afford to convey the pictorial intimations which the subjoined engravings exhibit.

The first illustrates the statement just made by showing the manner in which, among the



[Wine Cart. Pompeii.]





[Manner of carrying Amphoræ.]

Romans, the wine was carried [to the house of the consumer or dealer] in *skin carts*, from which it is decanted at the door into amphoræ, in which it is carried to, and remains deposited in, the store-room or cellar. The manner of carrying the amphoræ is shown in the annexed cut. These customs are still those of Syria and Western Asia generally, with the exception that the skins (of the ox, goat, or kid, according to quantity) are not drawn on carts, but are carried by men or animals. Small quantities for current use are often kept in small kid skins, as was also a Roman custom.

Of the present process of making wine in Syria, there is a meagre notice in D'Arvieux.<sup>a</sup> We need not repeat over again, as

modern usages, those which have already been described as ancient. The principal difference which we notice is that the grapes are conveyed to the press, or to the market, not in crates or baskets, but in skins, which are stuffed at the mouth with leaves to protect the fruit while transported by camels and other animals. For the rest, we prefer to quote the following from Paxton, who had the opportunity of witnessing the vintage in Lebanon:—

“There are several houses<sup>b</sup> that seem to be common property, where they express the juice of the grape. They have along one side of the house a row of large vats, into which the grapes are thrown; and beside these some stone-troughs, into which the juice flows. Men get into the vats, and tread the grapes with their feet. It is hard work, and their clothes are often stained with the grape. The figures found in the Scriptures taken from this are true to the life. ‘I have trod the wine-press alone;’ ‘I will stain all my raiment.’ ‘The wine-press was trodden without the city.’ The juice that was extracted when I visited the press was not made into wine, but into what is called *dibs*.<sup>c</sup> It resembles molasses. They take the juice from the troughs, put it into large boilers, reduce it to one-half, possibly one-third of the original quantity. It is then removed to large earthen jars, and subjected to a process not unlike churning, which is repeated for a few days until it thickens. When properly churned or beaten, but little separation of the particles takes place. It forms a pleasant article for table use, and is decidedly preferable to molasses.”<sup>d</sup>

The difference as to the making of wine is that the juice extracted by the press is deposited in earthen vases, where it is stirred about with a stick every day, for a month or more. When the working is over, it is restored to the vat, upon a thick bed of the murk from which it was taken. It here settles and clarifies, and is finally drawn off into the pitchers in which it is to be preserved.<sup>e</sup>

With respect to the quality of the wines of Syria, there are differences in the statements which, we suppose, is to be attributed to the difference in the localities in which they are produced. Those of Aleppo are poor. Dr. Russell informs us that although the white wines there are palatable, they are so thin and poor that it is with difficulty they can be preserved from one year to another. The *red wine* is deep-coloured, strong, hardy, without flavour, and more apt to produce drowsy stupidity than to raise the spirits. One-third part of the white-wine mixed with two parts of the red, make a liquor tolerably palatable, and much lighter than the red-wine itself.<sup>f</sup>



[Skin Bottle.]

<sup>a</sup> ‘Mémoires,’ vi. 462, 463.

<sup>b</sup> At Bhadoom.

<sup>c</sup> This is supposed to be sometimes mentioned in Scripture under a word which our translation renders by “honey,”—an explanation which obviates some difficulties which occasionally attends the use of the better word.

<sup>d</sup> Paxton, 215.

<sup>e</sup> D'Arvieux, vi. 463.

<sup>f</sup> Russell, i. 81.

Dr. Bowring's report respecting the wines of Syria is very brief:—"Wine might become an important article both for consumption and export in Syria [as it anciently was]. Some of the convents of Mount Lebanon produce it of excellent quality, known by the name of the 'Vino d'Oro.' It is both white and red, and when properly attended to is very superior. But the habit of boiling wine is almost universal, and destroys its character. The use of skins, as in ancient times, is very unfriendly to the preservation of the finer characteristics."<sup>a</sup>

D'Arvieux, writing of the same wine (of Lebanon) remarks that it is excellent, and has much resemblance to the wine of Cyprus, but that it is necessary to avoid drinking it unmixed with water, as it contains a large quantity of spirits which offend the nerves, and produce considerable inconvenience, especially when it is new.<sup>b</sup> Rauwolf drank some wine in Lebanon which he thought superior to the wines of Cyprus and Candia.<sup>c</sup> Le Bruyn affirms that wines more delicate or better than those he drank at the monastery of Canobin (in Lebanon) were not to be found in the world. They are of a fine red colour, and so unctuous that they adhere to the glass. He confesses that the common and more abundant wines of the mountain are not equal to those to which his statement refers.<sup>d</sup> La Roque, speaking of the same wines (at Canobin) says that it would be difficult to find any more excellent than were there set before him, and which led him to perceive that even now the prophetic praise of the wine of Lebanon<sup>e</sup> was still applicable. "These wines are of two sorts; the most common is the red, and the most exquisite is of the colour of our muscadine wine; they call it golden wine [*Vino d'Oro*] on account of its colour."<sup>f</sup>

Concerning the wines of the southern country, little information is to be obtained from travellers. Morison, indeed, speaks of the wine obtained from the vineyards of the valleys a few miles north-west of Jerusalem (which he takes to be the country of Sorek, from which the most esteemed vine of ancient Palestine took its name), of which he drank in the monastery of St. John. This is, he says, one of the best in the Holy Land. It is a white wine, so delicate, so delicious, that in tasting it his conscience rebuked him, and accused him of imitating so badly the ardent Baptist, who, although born in this district, never tasted wine or strong drink.<sup>g</sup>

We know that the wines formerly held in the highest estimation were those obtained from the grapes of Lebanon, of Hermon, of Carmel, of the mountains of Israel, and of Caphtor, which last some take to be Crete, others Philistia.<sup>h</sup> The valley of Sharon also was celebrated for producing the best wine in Judea, and so strong that it was generally taken with two parts of water.<sup>i</sup> The wine of Helbon (Aleppo) was so celebrated that the kings of Persia are said to have drank no other,<sup>k</sup> which, if true, is only likely to have been so while Syria was under their dominion. The Mishna forbids smoked wines from being used in offerings;<sup>l</sup> it would seem, therefore, that the Romans had introduced this usage of fumigating wines.<sup>m</sup> The Jews did not allow themselves the use of the wine or even vinegar of foreigners; not, certainly, from any views of policy as to the encouragement of the home products, but in fear lest the wine or vinegar should have been previously consecrated to the idols of a foreign worship.<sup>n</sup>

Mention is made of a kind of vinegar made from grapes which were unripe at the time of the vintage, and which were more common on the tall than on the low-growing vines. This usage was proscribed in many of the Rabbinical dicta; but less with reference to any supposed insalubrity in the product, than because it was not possible that the tithe could be drawn from this unripe gathering or the products of it.<sup>o</sup> In the Scriptures two kinds of vinegar are mentioned; one was really a weak kind of wine, used as a common drink by the labouring classes,<sup>p</sup> as now in Syria and southern Europe; and this was probably the kind of wine of

<sup>a</sup> Bowring, 17.

<sup>b</sup> D'Arvieux, vi. 463.

<sup>c</sup> Rauwolf, 205.

<sup>d</sup> Le Bruyn, ii. 37.

<sup>e</sup> Hos. xiv. 7.

<sup>f</sup> La Roque, i. 54. See also Belon, 340.

<sup>g</sup> Morison, 493.

<sup>h</sup> Kimchi in Hosea, xiv. 7.

<sup>i</sup> Mishna, tit. Shabbath, 77; Nidda, 19.

<sup>k</sup> Athenæus, l. i.; Strabo, l. xv.

<sup>l</sup> Mishna, tit. Menachoth, viii. 6. et Comment.

<sup>m</sup> Plin. Nat. Hist. xiv. 20; Beckmann, 'Invention,' i. 415. This operation was performed by kindling rags of linen dipped in melted brimstone, and suffering the steam to enter a vessel full, or partly full, of wine, as is now done with cider.

<sup>n</sup> Mishna, tit. Menachoth, viii. 6: et Comment.; Avoda Sara, ii. 6.

<sup>o</sup> Mishna, tit. Therumah, xi. sec. 2, et Comment.

<sup>p</sup> Ruth ii. 14.

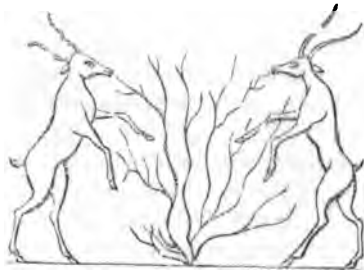
which Solomon supplied 20,000 baths to Hiram for the labourers in Lebanon.<sup>a</sup> The other had a sharp and acid taste, like our own.<sup>b</sup>

We have already mentioned, after Paxton, the mode of preparing the inspissated juice of the grape into *dibs*. This matter has much the appearance of coarse honey, but is of a firmer consistence. It is brought to the towns in goat-skins, and sold in the bazaars, and is much used instead of honey.<sup>c</sup>

*Raisins*, or dried grapes, formed a preparation much in use among the old Hebrews, and from its portability and little contingency of damage, formed an important article in provision of those who took arms.<sup>d</sup> In later times raisins formed an article in their export trade.<sup>e</sup> Raisins still take a large place in the food of the inhabitants. They are eaten with bread, and much used in rice pillaus and in sherbets. A very large portion of raisins are also consumed in the distillery, which is carried on as well by Moslems as by Christians. Aniseed is added in the distillation, and the result is a strong spirit called *araki* or *rakee*, or as we call it, *arrack*.<sup>f</sup> Thus in one way and another, the fruit of the vine still retains its ancient importance and prominence, notwithstanding the interdiction of the wine to the Moslems.

Mr. Paxton witnessed the process of making raisins at Bhadoom in Lebanon. The grapes are collected and dipped in a weak ley, with which a small quantity of olive oil has been mixed. They are then spread out on the ground, and several times a day this mixture is sprinkled over them. This is continued for six, eight, or ten days, according to the dryness of the atmosphere, until the raisins are cured. They are then taken up, and while warm from the sun, put into jars and pressed down hard, and thus preserved for use or sale. There is, however, very little wine, *dibs*, or raisins, now exported; most of that which is made being kept for family use.

It appears from the annexed engraving that the Egyptians allowed kids, and probably other animals, to browse upon the vines that grew as standing bushes. This was undoubtedly the practice among the Hebrews, and it possibly furnishes the point to that regulation of the Mosaical law which forbids a man to introduce his beast into his neighbour's vineyard. The custom still subsists. Dr. Chandler noticed at Smyrna that the leaves of the vines were, by the 30th September, decayed or stripped by the camels and herds of goats which are admitted to browse after the vintage.<sup>g</sup> As it is not to be supposed that the leaves had fallen so early, and as the same traveller saw



[Kids browsing on Vines.]

them green on the vines elsewhere in October, they had been doubtless stripped of their leaves by the cattle.

**GRAIN.**—When, in the different localities, the labours of the vintage are completed, and as soon as the first rains have mollified the soil, the peasantry betake themselves to ploughing and sowing the ground, for the early harvest of corn. As these operations may be said to have their regular commencement in this month, we have chosen this place for the introduction of the statement we have to offer respecting these and the other agricultural processes of the season. With a view to this, we have provided ourselves with a series of pictorial illustrations from the ancient Egyptian sculptures at Eleithuias, which will, we expect, throw more light on the subject than it has hitherto received; for we have to regret that Sir J. G. Wilkinson's promised volume on Egyptian Agriculture has not yet been produced.

In taking the subject of *ploughing*, with which that of *sowing* and other operations are inseparably connected, we shall first trace out the facts derivable from the representations of

<sup>a</sup> Chron. ii. 10.

<sup>b</sup> Pro. x. 6; xxv. 20.

<sup>c</sup> Russell, i. 82.

<sup>d</sup> 1 Sam. vi. 19; xxv. 18; 2 Sam. xvi. 1; 1 Chron. xiii. 40.

<sup>e</sup> Plin. Nat. Hist., xv. 18.

<sup>f</sup> Russell, i. 8.

<sup>g</sup> 'Travels in Asia Minor,' 142.

ancient agricultural operations which the old Egyptians have transmitted to us ; and then we will endeavour to trace the Scriptural intimations, and connect them with, or illustrate them by, these, or by the existing processes and implements. In the first portion of this service we shall be much assisted by the descriptions which M. Costaz has given of the painted sculptures in the grottoes of Eleithuias.\*

Since Egypt was undoubtedly one of the first countries brought under human culture, it is evident that (with certain limitations suggested by the peculiarities in the physical constitution of that country) it affords much illustration, not only to the particular history of such processes in Palestine, but to their general ancient history, in the largest acceptation of the term.

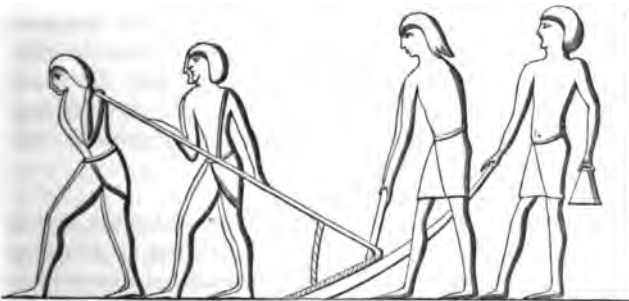
Men could not long have turned their attention to agriculture before they discovered the use and indeed necessity, of turning and breaking the soil for the reception and nutriment of the seed committed to it. This was first done by the *hoe*, the form of which, and the manner in which it was wrought, is shown in the annexed engraving, which exhibits men in pairs, having in their hands hoes, with which they work the ground. The hoe is composed of two unequal pieces, joined at the extremities so as to make an acute angle. The shortest of the two pieces serves for a handle, the other, slightly curved inwards, and pointed at the end, forms the beak of the instrument, with which the soil is smitten.



[1. Hoeing the Ground.]

And then, that the percussion may not too much strain the union of the two parts, they are relieved and strengthened by a connecting cross-piece. Here, certainly, we see the first step towards a plough: and so important was it held by the Egyptians, as marking a stage in the history of their civilization, that it was enshrined among their hieroglyphic symbols, and figures largely as such in all their monuments, —where it remained a mystery until its use and signification was illustrated by the paintings of Eleithuias, in the figures which we have copied.

Our next engraving marks an interesting progress in the transmutation of the hoe into the



[2. Plough Drawn by Men.]

plough. The strength of man is still the acting power applied to the instrument; and we see that it requires four men, in couples, to draw it, and two to regulate its movements. This plough is, in fact, no other than the hoe, with the following modifications:—the beak of the hoe performs the functions of the ploughshare, while the handle has been elongated to facilitate the draught, and, in some slight degree, to regulate the course of the machine. Near the top of the angle a piece of wood has been fixed, upon which a man presses with his hand to thrust or keep down the point of the ploughshare. This pressure is the only effect the man can produce; he has no means of influencing the course of the machine, which appears to depend almost exclusively upon the men by whom it is drawn.

It should be remembered that in Egypt the soil is light, and does not offer much resistance

\* 'Grottes d'Elethya' n Descript. de l'Egypte; Antiquités Mémoires, vi. 97, &c.

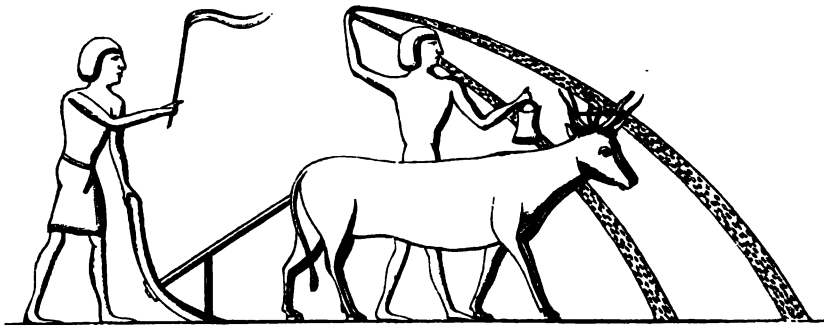
to the plough, especially at the time of sowing, which is when the rigid soil has been mollified and fertilised by the overflowing of the Nile. It is possible that the origin of the plough may, by the operation of such considerations, be referred either to Egypt, or to some other country similarly circumstanced; for the effect and object of such a machine was far more likely to occur, as the soil is open to be acted upon by the simplest means and the smallest amount of labour. Egypt, indeed, from the earliest times, laid claim to the honour of the invention of this important implement. We may register this claim, without incurring the necessity of discussing its merits.

After this process had been reached, there remained but one step to the emancipation of man from the most important labour of the soil, and to throw the burden of it upon animals. From the same source we learn how this result was obtained; for there we perceive ploughs very similar to the preceding which are drawn over the ground by oxen. Here although the plough is constructed with more care than in the previous instance, there is little real



[3. Plough Drawn by Oxen.]

difference. The man behind performs the same duty as before in keeping down the point of the share, with little influence in the direction of the plough. The oxen, therefore very insufficiently

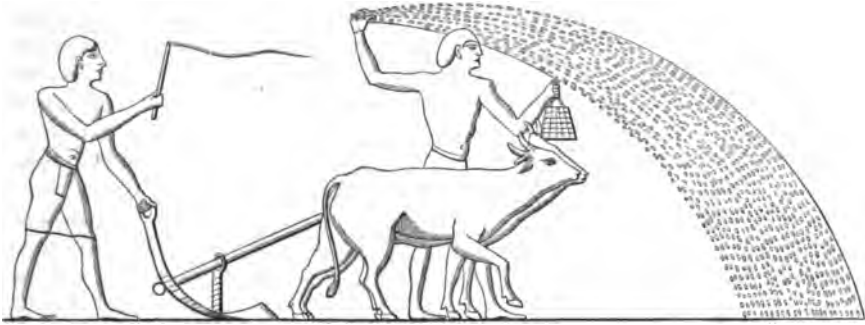


[4. Another Plough of the same Class.]

supply the place of the men in that part (the draught) which was supposed to require strength alone; but strength alone, unguided by intelligence, did not suffice. Here then the gain, from the application of the strength of the oxen to this labour, was counterbalanced by a manifest loss in another direction. It is obvious that the whip, whether in the hands of the labourer himself, or of an assistant, could scarcely maintain the animals in any determinate direction, whatever effect it might have upon their exertions. It therefore became necessary that man should return to the labour from which he thought himself relieved, or that the plough itself should receive such modifications as might adapt it to this new contingency.

The paintings in another grotto—that of the Vizier, as it is called—in the same place, offer several examples of ploughs which may show the various means consecutively devised to obtain the directing power, and to simplify it when obtained.

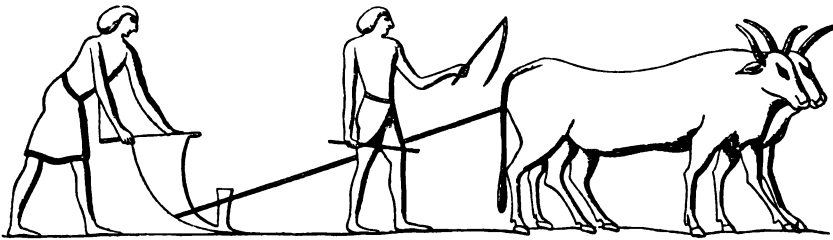
To effect this object first was tried a ring-hole, or rather handle, framed at the upper end of the piece of wood on which the pressure was exercised, while the pole itself moved freely



[5. The Ring-handle Plough.]

in another ring. The ploughman was thus able to effect the double object of forcing down the point and of preventing the irregular movements which the unequal resistance of the soil occasioned.

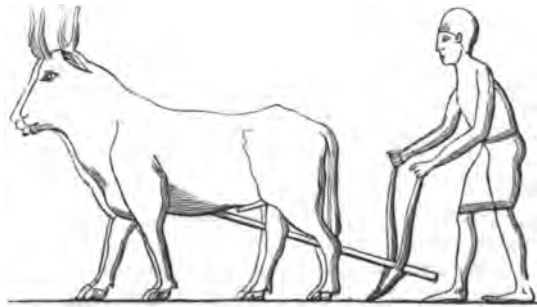
Whether the example next offered preceded or followed in order of time and invention, the



[6. Two-handed Plough]

last which we have given, is not very easy to determine. In one respect it is obviously superior, as enabling the ploughman to use both his hands in a way somewhat analogous to the ultimate improvement, but then his hands are so fully occupied that he needs an assistant to drive the oxen, with which the other could dispense.

At last the idea occurred of constructing at the hind part two horns, separated from each other, crooked at the back, and making, by a solid conjunction, one body with the point or beak. This construction gives to the ploughman the facility of acting with both his hands upon a more powerful lever, and greatly increases his power of giving a more uniform depth to the furrow, and of directing it in a straight line. In this, its final condition, the ancient Egyptian plough differs but little from that which is still used in France under the name of *araire*. We cannot doubt that the ancient Egyptians knew the use of the wheel, but there is no evidence that they ever applied it to their plough. The facility with which the soil is laboured in the country of the Nile enabled the inhabitants to dispense with this further perfection to their plough; which seems quite a modern invention compared with the other parts.



[7. Horned Plough.]

The plough of the modern Egyptians, which is also partially used in Syria and other parts



[8. Modern Egyptian Plough.]

of Western Asia, is perhaps not so well constructed as some of the ancient specimens, and is certainly much less light and elegant.

The later figures do not show in what manner the oxen were attached to the plough; but, from 3 and 4, we see clearly that they were attached by the horns. This was not the case among the Hebrews, who certainly laid the yoke upon the *neck* of the oxen.

It is thus we acquire a sort of actual knowledge of the origin of the plough, and to trace its successive changes by which a simple hoe became the first and most important of all the instruments employed in agriculture.

All the Scriptural intimations respecting the plough in use among the Hebrews agree with the figure of it which from those sources we have obtained. Indeed, it is not to be supposed that they had any *better* plough than their Egyptian neighbours, and such evidence as we possess shows that they had one not unlike it. It is indeed remarkable that the *modern* Syrian plough has more resemblance, even in its figure, to the earliest specimens in the series of ancient Egyptian examples than has that modern Egyptian plough of which we have given a figure. This resemblance has indeed been noticed by Wilde, who describes the plough of Palestine as one of the rudest instruments of the kind he had ever seen, "It resembles the ancient Egyptian plough, and does little more than scratch the soil, making a furrow scarcely three inches in depth."<sup>a</sup> This simplicity of construction also attracted the notice of Elliot, who thus describes it. "A long pole parallel to the ground, has one end curved so as to raise it over the neck of the oxen. Across the other a second piece of wood is fixed at an angle of 111° or 130°: one extremity of which enters the ground, the other serves as a handle."<sup>b</sup> Volney indeed says that the Syrian plough is nothing more than the branch of a tree, cut below a bifurcation, and used without wheels. Dr. Bowring describes it as "the old Roman drawn by bullocks."<sup>c</sup> Now the old Roman plough never reached the perfection to which the Egyptians brought theirs; and that, as well as the descriptions which we have adduced, correspond most with the fifth example of the Egyptian specimens. The Scriptural references to the plough in the same degree receive illustration from it; and, upon the whole, we are disposed to regard it as the type, not only of the old Hebrew and Roman ploughs, but of those which are still preserved in Western Asia. Even in Egypt there is a plough more like it than is the one we have introduced. We have seen no figure of it (as modern); but it is described by Dr. Richardson as remarkably slight,

<sup>a</sup> Wilde, ii. 182.<sup>b</sup> Elliot, ii. 237.<sup>c</sup> 'Report,' 9.

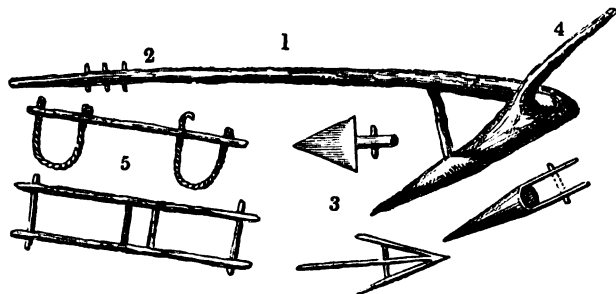
and having but one handle, which the ploughman holds in one hand and carries a long stick in the other.<sup>a</sup>

The Syrian plough is so light that a man of moderate strength can carry it with one hand.<sup>b</sup> Although Dr. Bowring says it is drawn by bullocks; we are more disposed to rest on the concurrent testimony of Dr. Russell and Volney, who say that it is drawn seldom by oxen, but by cows and asses.<sup>c</sup>

The ploughshare is a piece of iron, broad but not large, which tips the end of the staff. This appears (from the shape) to have been the case in some of the Egyptian specimens, although M. Costaz could find nothing in the *colouring* of those parts to confirm the conclusion. The resemblance which a portable staff, thus tipped with iron, offers to some of the weapons of ancient warfare will be obvious to the reader, as well as the little trouble with which (as was actually the case<sup>d</sup>) it might be turned into a formidable warlike weapon, and restored afterwards to its original use.

Mr. Fellowes, in his recent work on Asia Minor, gives a representation (which we have caused to be copied) of the plough used in that quarter.

It is manifestly the same as the Syrian plough to which the statements just given refer. It clearly shows the resemblance to the early Egyptian plough, and even to the primitive hoe. "The plough," says Mr. Fellowes, "each portion of which is still called by the ancient Greek names, is very simple, and seems suited only to the light soil which prevails here.



1. The plough. 2. The pole. 3. The share (various). 4. The handle, or plough tail. 5. yokes.

It is held by one hand only. The shape of the share varies, and the plough is used frequently without any. It is drawn by two oxen, yoked from the pole, and guided by a long reed, or thin stick, which has a spade or scraper at the end for cleaning the share.<sup>e</sup>

From the instances adduced from Egyptian Antiquities, as well as from the evidence as to the slight construction of the Syrian plough, it appears that the ploughman was under the necessity of guiding it with great care, bending over it, and loading it as far as possible with his own weight, as otherwise the share would glide over the surface, making scarcely any incision; and the two important objects of making his furrow straight, and of pressing the plough into the ground, requiring that careful and incessant attention to which our Saviour alludes in the awful declaration, "No man having put his hand to the plough and looking back, is fit for the kingdom of God."<sup>e</sup>

As to the *pressure* required from the husbandman in the ancient ploughs, it is well to direct the attention of the reader to the curious circumstance that in the second of our engravings there is a man who follows the plough, ready to load it as occasion may require with a heavy weight which he bears in his hand.

The use of the goad does not appear in the Egyptian sculptures, although it was in use in Palestine as early as the times of the Judges. It is still in use, and an engraving of it has been given in the History.<sup>f</sup> It is seven or eight feet long, armed with a sharp point of iron at one end, and at the other with a plate of the same metal shaped like a caulking chisel. This enables one man to execute every necessary operation; for with one hand he guides and presses

<sup>a</sup> Richardson, ii. 197.

<sup>b</sup> Russell, i. 73.

<sup>c</sup> Volney, ii. 273; Russell, i. 73. "By one or two small cows, sometimes by a single ass."

<sup>d</sup> Thus the prophet Joel conveys the call to war from the peaceful employments of the field by, "Beat your ploughshares into swords, and your pruning-hooks into spears."—Joel, iii. 10. Isaiah reverses the image, for restored peace, "They shall beat their swords into ploughshares, and their spears into pruning-hooks."—Isa. ii. 4.

<sup>e</sup> Luke ix. 62.

<sup>f</sup> See p. 374. It is also seen in the cut of the Modern Egyptian plough.



down the plough, while with the sharp end of the goad, which he holds in the other, he is able to spur the oxen, and, with its spaded heel, to clear the earth from the ploughshare.<sup>a</sup> The act of refractory oxen in resisting and kicking the goad, supplied a proverbial expression, which is strikingly used in the narrative of St. Paul's conversion.<sup>b</sup>

It is seen, by comparing the Egyptian examples, that for want of this accommodation, the beam of the plough was either made so short that the labourer could reach his cattle with a whip, or that the services of a man or boy were necessary when the length of the beam increased the distance between the ploughman and the oxen. The furrows traced by the Syrian plough, although extremely shallow, and of great length, and so extremely straight, that one would imagine they must have used a line in tracing them.<sup>c</sup> To the length of the furrows, an allusion may probably be found in one of the Psalms;<sup>d</sup> and the history of Jonathan's exploit at Michmash contains an expression<sup>e</sup> which probably may be interpreted to refer to the ancient use of the plough in measuring land.

After the ploughing, the husbandmen had to break the clods in clayey soils, and to level the surface. This operation is only once mentioned in Scripture;<sup>f</sup> and it appears to have been performed by the hoe, as was anciently and is now generally the case in Egypt and Syria. In the neighbourhood of Cairo, in the former country, it is, however, usual to employ a roller armed with iron pins, to break the clods.<sup>g</sup>

It has already been observed that ploughing does not commence until after the earth has been softened by the first rains of autumn: and the frost is seldom severe enough to prevent the ploughing at all times during the winter.

The ensuing operation of SOWING next requires notice. The cuts already given from the grottoes of Eleithuias supply some information on this subject. There we see men holding in the left hand a sort of pocket with a handle, from which they take the seed with the right hand, and appear to fling it at random. The position of the sower at the head of the ploughing ox can prove nothing as to his true position, as the Egyptian artists often represent in one continuous line, scenes that, from the nature of things, *must* in fact be dispersed over different parts of a field.

The Scriptures contain little information with respect to this important operation. There is a precept against the Egyptian practice of sowing a field with different seeds;<sup>h</sup> and one passage contains an allusion to the treading in of the seed by the feet of cattle. Both Herodotus and Diodorus mention the use of hogs and sheep for this use in Egypt; and the sculptures in fact exhibit these animals in some such employment.<sup>i</sup> Rice is still trodden in by the feet of oxen in various places; and as this grain is sown, as it were, upon the water, it is not unlikely that the passage cited<sup>k</sup> may have reference to its culture.

The harrow (or rather the principle of it in some shape or other) is known and used more or less throughout Asia. It is however but little employed in Syria, where it is more usual to cover the grain by repassing the plough over the edge of the furrow; and in places where the soil is sandy, they sow first and then plough;<sup>l</sup> and *if* the position of the sower in the Egyptian examples be correct, it must indicate the one or the other of these practices. In Egypt frequent use is now made of a bush-harrow, when the earth is moist. This is simply a large bundle of bushes.<sup>m</sup>

In troubled times, and in border localities, the operation of sowing is attended with some danger, as the Arabs lie eagerly in wait to secure such easy and valuable spoil by plundering the sower. It has therefore been not unusual to see the sower well armed himself, or protected and encouraged by the presence of one or two armed friends, while he performs his important office. To a similar state of things there seems to be some allusion in the Scriptures.<sup>n</sup>

ESCULENT VEGETABLES.—We find nothing to add under this month to what has already

<sup>a</sup> Buckingham's 'Palestine,' i. 91; Elliot, ii. 267.

<sup>d</sup> Psalm cxxix.

<sup>e</sup> Wilkinson's 'Topog. of Thebes,' 215.

<sup>k</sup> "Blessed are ye that sow beside all waters, and bring thither the feet of the ox and the ass."

<sup>l</sup> Russell, i. 74; Buckingham, i. 224.

<sup>o</sup> 1 Sam. xiv. 14.

<sup>b</sup> Acts ix. 5.

<sup>h</sup> Isa. xxxii. 20.

<sup>m</sup> 'Topog. of Thebes,' 214.

<sup>c</sup> Russell, i. 75.

<sup>f</sup> Isa. xxviii. 24.

<sup>i</sup> 'Topog. of Thebes,' 215.

<sup>n</sup> Psalm cxxvi. 5. 6.

been stated. Some of the vegetables which have been named and described under preceding months are again named in this, as being still, from the produce of the second crop, good for food. These are mostly roots and cucurbitaceæ. The most ample lists of these and other classes of cultivated vegetables noticed in this month, may be found in Addison's 'Palmyra, and Damascus.'

**PLANTS.**—Of the cotton-plant some notice has already been taken. We now again mention it for the sake of introducing the following further information which the Report of Dr. Bowring has since afforded.

He states that the cotton of Syria can seldom compete with that of other countries, in price, as well as from its inferiority of quality.

The cotton of northern Syria being produced from the annual plant, is subject to great vicissitudes. The quality, although generally fine, is of short staple, and the greater part of the crops are of a quality much inferior to the Souboujas grown in the neighbourhood of Smyrna. But there is a small quantity grown near Aleppo equal to the best Souboujas. It is seldom sent to the English markets, where it is suited to only the most ordinary purposes, such as the wicks of candles; but is for the most part shipped to the Italian, French, and German ports.



[Cotton Plant.]

In 1836 there was an almost total failure of the crops of northern Syria. An importation consequently took place from Nablous (Shechem) in Palestine, the quality of which is very superior to that of Aleppo, although *that* is the best in northern Syria. From the Nablous district, it is calculated that from 4500 to 5000 cantars are the annual produce, whose value at the place of growth is from 800 to 900 piastres the cantar. It is calculated that about three-fourths of this fine crop is exported (chiefly to Marseilles), and one-fourth consumed in the country. Acre and Jaffa also produce some quantities of cotton.

It is calculated that the whole produce of cotton, in northern and southern Syria, is between 30,000 and 35,000 cantars, of an average value of about 35,000*l*. Of this the districts of Acre and Nablous furnish about 2200 tons. But the production might be indefinitely increased by additional capital and labour.

In the three last years there was an export of cotton into Mesopotamia, in consequence of the destruction of the crops by the locusts in that quarter.

The use to which the consumption of cotton is applied in Syria is principally in the spinning of cotton yarn of an ordinary quality, with which coarse clothes are woven for under garments, drawers, shirts, sheets, mattress coverings, stockings, and a variety of other articles of ordinary quality. But for the better kinds the consumption has decreased by the introduction of our (English) cotton yarn, and principally by the importation of the grey-domestics, or long cloths, which is one of the great articles of British manufactured goods imported.\*

To the same source we are indebted for the following notice of another important article of Syrian produce—*Tobacco*. The consumption of this in Syria is universal, both by males

\* See 'Report on Syria,' 14, 15, 58, 65, from which the statement now given is collected and condensed.

and females. It is impracticable to obtain anything like an approximate or correct return of the quantity produced in Syria, but it is, after the produce of wheat, one of the greatest in importance. It is grown almost in every part, but principally in the Aleppo, Latakia, Tripoli, and Mount Lebanon districts, where the finest qualities are obtained. It is almost all consumed for smoking, though that produced in the gardens of Aleppo is made into snuff. Considerable exportation of tobacco takes place from Latakia, and some from Tripoli and other parts to Egypt; and these, with its universal consumption throughout Syria, must give, without a specific return, an idea of the importance of this article of produce. No tobacco is received in Syria from Europe or from any other country; neither is any portion of that produced in Syria exported to any country of Europe.<sup>a</sup> In Palestine itself, tobacco plantations occur in almost every quarter.<sup>b</sup>

### NOVEMBER.

**WEATHER.**—This must be accounted as one of the rainy months, although with frequent intervals of very fine weather. The rain usually falls in heavy showers, and when one or more such showers fall in one day, the day is, in Dr. Russell's register for Aleppo, called "rainy;" and it would appear that the number of such rainy days rarely exceed seven. It is very uncommon to see snow even in northern Syria; but after the middle of the month, when the weather is serene, the mornings are slightly frosty. The winds, which are variable and seldom strong, are generally from the northerly or easterly quarters. The greatest height of temperature indicated by the thermometer at Aleppo is 65°, the least 44°, and the greatest variation of the thermometer in one day is 8°. The mercury throughout the month falls gradually from 60° to 50°; the difference in the same day varies from 5° to 2°; and there is no difference in rainy weather.

In Palestine and the country east and north-east, it sometimes does not commence to rain until the early part of this month. The first rain was experienced, in different years, by Gumpenberg at Jerusalem, on the 1st; by Addison on the 3rd, at Palmyra; by Des Harpes at Tyre, on the 4th, after nine months in which not a drop of rain had fallen; by Korte on the 11th, between Urfah and Aleppo; Cotovic travelled in rainy weather on the 14th and 16th (near Shechem); but on the 17th he found that no rain had fallen on the mountains of Gilboa and Hermon.<sup>c</sup> The description given by Addison of the commencement of the rains is so graphic that we cannot refrain from introducing it below.<sup>d</sup> It was however in the desert.

The heat of the day has now much diminished; but on bright days the power of the sun is still very considerable. But the nights are cold, and uncomfortable for those who travel in the night; even the days are somewhat cold when the sky is overcast.<sup>e</sup>

Russell remarks that the transition from the autumn to winter is slower than from spring to

<sup>a</sup> 'Report on Syria,' 17.

<sup>b</sup> Consult Nau, 17; Mariti, li. 190; 136; Burckhardt, 18, 21, 80, 178, 224, 284, 391, 410, 489; Buckingham, 'Arab Tribes,' 533; Clarke, 212, 423.

<sup>c</sup> Gumpenberg, i. 443; Addison, li. 324; Des Harpes, 441; Korte, 187, 278, 380; Cotovic, 336—337.

<sup>d</sup> "It was a strange and wild day,—the wind was every moment increasing and whirling the sand in eddying columns through the air, while dark threatening clouds were collected all around the mountain range on the outskirts of the desert. . . . Suddenly a hurricane of wind swept along, and filled the whole atmosphere with a dense fog of sand. . . . Every object ten yards distant was shrouded from view; then came a sudden lull, and the sand (which the wind had raised) was seen falling down in showers. The long line of columns (at Palmyra) was scarcely again visible, when a sudden flash of forked lightning darted down among them, instantaneously followed by a burst of thunder that made the tottering walls tremble, and large warm drops of rain spattered on the stones. Again the wind swept by, now driving clouds of sand, now scattering them, and opening a uninterrupted view across the desert, which was covered with a dark sombre leaden tint reflecting back the gloomy colour of the dark thunder-clouds that hung above it. The forked lightning darted in every direction, and loud peals of thunder revibrated from different quarters at the same time. The rain poured in torrents and beat down the sand, and the whole scene was truly sublime."

Again, the night following:—"We had an awful night of it. The rain came down in one universal deluge of water, the whole place was flooded. . . . The lightning was such as I never before saw, flash followed after flash so instantaneously that it was one continued blaze of light, in which the columns, the ruins, the towers, backed by black clouds, presented a sublime appearance; and the view over the desert, as flash after flash gleamed over the wide solitary waste, was the strongest and wildest imaginable. The wind had died away, the black clouds hung motionless, and the peals of thunder followed one another in such quick succession as to keep up one continued roll."—'Damascus and Palmyra,' li. 394, 395.

<sup>e</sup> Cotovic, 334, 367; Gumpenberg, 444.

summer. The cold does not increase suddenly, the rain falls in showers less heavily, but of longer continuance; and the sky, during the fair intervals, is oftener cloudy.

**TREES.**—From the preceding statement respecting the weather, the reader will be prepared to expect that the leaves fall from the trees much later than with us. In fact the leaves continue on the trees, for the most part, through November, and fall in the early part of December.<sup>a</sup> Of particular trees there is little to notice that has not been said under preceding months. The fig-tree is, however, laden with fruit;<sup>b</sup> and as it is in connection with this tree that the only fact we know in the treatment of trees by the ancient Hebrews occurs, while we have reached the season in which such operations are performed, some notice of the subject may not be misplaced.

In the parable of the fig-tree which had for three years been barren, and which the proprietor therefore doomed to be cut down, the gardener is represented as praying for delay until he should *dig about it and dung it.*<sup>c</sup> To this Lightfoot appends from the Talmud the following short hints: “They lay dung to moisten and enrich the soil; dig about the roots of the trees; pluck up the suckers; take off the leaves; sprinkle ashes; and smoke under the trees to kill vermin.” The process of digging is too obvious to need further explanation. We may observe, however, that the Hebrews doubtless sometimes treated their trees as did the Egyptians, in whose sculptures we frequently see trees surrounded at the base of the stem with a circular ridge of earth, which, being lower in the centre than at the circumference, retained the water, and directed it more immediately towards the roots. The annexed engraving exhibits this treatment according to the Egyptian mode and our mode of representing it.



[Treatment of Trees.]

The use of manures is a subject of somewhat more importance. The Hebrews could not have brought this usage from Egypt, where manures are never used and would be useless: but they doubtless adopted and preserved the customs which existed among the previous inhabitants of the country. That manures were used by the Israelites, it perhaps requires no reference to Scriptural texts to prove; but as it has not been our habit to state anything without proof, we may refer not only to the passage which has already been adduced, but to that passage in which Moab is threatened to be trodden down, “even as straw is trodden down for the dunghill,”<sup>d</sup> which shows also that rotted straw was, as with us, used with manure in dunghills. Of dunghills we read often;<sup>e</sup> as well as of the draught-house;<sup>f</sup> and there was a particular gate at Jerusalem called the Dung Gate, at which the dung was carried out.<sup>g</sup>

The Israelites had comparatively few horses, and few swine, two sources of excellent strong manure. The chief of their animals were oxen, camels, asses, sheep and goats. The dung of the cow and camel was used to a considerable extent for fuel, and the dung of the sacrifices was directed to be burned<sup>h</sup>—all circumstances tending to diminish the supply. If the “dove’s dung,” mentioned in 2 Kings vi. 25, were really such, it was probably preserved as a manure for melons, for which it is invaluable. It is also an excellent manure for flax. The deposit from the annual overflowings of the Jordan must have formed a good manure, or rather top-dressing to the cultivated fields upon its banks. That *salt* was used for manure is evident; and from comparing the passages which afford this evidence,<sup>i</sup> it would seem that the salt was sometimes sown by itself in the land, and sometimes mixed in the dung-hill to promote putrefaction, and to contribute its saline particles to the mass.

From other sources we learn that a dunghill in a public place exposed the owner to the payment of whatever damage it might occasion; and any one might remove it as a nuisance.<sup>k</sup>

<sup>a</sup> Russell, i. 69.

<sup>b</sup> Burckhardt, 100.

<sup>c</sup> Luke xiii. 7.

<sup>d</sup> Isa. xxv. 10.

<sup>e</sup> 1 Sam. ii. 8; Ezra vi. 11; Sam. iv. 5; Dan. ii. 5; iii. 99.

<sup>f</sup> 2 Kings x. 27.

<sup>g</sup> Neh. ii. 13; iii. 13, 14; xii. 31.

<sup>h</sup> Exod. xxix. 14.

<sup>i</sup> Matt. v. 13; Luke xiv. 34, 35.

<sup>k</sup> Mishna, Bava Kama, iii. sec. 3.

Dung might not during the seventh year be transported to the neighbourhood of the fields intended to be manured.<sup>a</sup> It was indeed permitted to fold cattle, for the sake of their manure, upon the lands that required it, in the Sabbatic year, under certain restrictions;<sup>b</sup> and it is from this only that we learn that the practice existed among the Jews, who would seem more generally to have folded their sheep within walled enclosures,<sup>c</sup> the occasional clearance of which must have afforded a principal supply of manure. A fresh (or previously uncultivated) land might be sown immediately after the termination of the Sabbatic year; but this authorization did not extend to lands on which cattle had been thus folded.<sup>d</sup> It would seem that gardens (except a few old rose-gardens) were not allowed within Jerusalem, on account of the manure they would have required; and "because of the stench" thus produced, as well as because of that arising from the weeds thrown out from gardens.<sup>e</sup> From another passage of the Talmud<sup>f</sup> we learn the curious fact that the surplus blood of the sacrifices offered in the Temple, that is to say, the blood which was poured out at the foot of the altar, after the altar had been duly sprinkled, was conducted thence by a subterraneous channel to the outside of the city, and was sold to the gardeners as manure for their gardens. In other words, the gardeners were allowed to use it on paying the price of a trespass offering, without which it could not be appropriated to any common use after having been dedicated at the altar.

We suppose that the existing customs of the country in this matter are much the same as those we have described, with the exception of those which resulted from the peculiar institutions of the Hebrews. But we possess no positive information with respect to the present practices: and it is singular that in this and many other matters, we are far better acquainted with the practices of the ancient than of the modern inhabitants of Palestine.

**THE VINE.**—The vintage is continued in some quarters into this month; and the grape may still be occasionally seen in the vine.<sup>g</sup>

**GRAIN.**—The ploughing and sowing commenced in October is continued in this month, which, after all, is apparently the month peculiarly characterised by these operations.<sup>h</sup>

**ESCULENT VEGETABLES.**—From the beginning of November to the end of March, the markets are supplied with cabbage, rapecole, spinach, beet, endive, raddish, red-beet, carrot, and turnip.<sup>i</sup>

**PLANTS.**—The gathering of the cotton continues up to the beginning of this month.<sup>k</sup>

## DECEMBER.

**WEATHER.**—This is also a rainy month; but the weather in the intervals, being often cloudy or foggy, is far less pleasant than in November. The greatest number of rainy days<sup>l</sup> mentioned in Dr. Russell's register is 16; the smallest 6; but the ordinary number is 8 or 9. There is always (at Aleppo) more or less of frosty weather in December, and sometimes a little snow falls towards the middle of the month, which is the time that the cold weather generally commences. The winds, as in the preceding month, are for the most part easterly or northerly. The greatest height of the thermometer is 55°, and the least 40°; the greatest difference in any one day is 5°. The usual morning station of the mercury in December is 46°; the difference in the afternoon, when it does not rain, is commonly 3°.

The above is Dr. Russell's statement respecting the weather at Aleppo, which we are careful to specify, because it appears to us that the winter temperature is somewhat colder at Aleppo than in most parts of Palestine. This we gather from various slight data—such as that the

<sup>a</sup> Mishna, Sheevith, iii. 1.

<sup>d</sup> Mishna, Sheevith, iv. 2.

<sup>f</sup> Mishna, Joma, fol. 58, 2.

<sup>b</sup> Korte, 187; Egmont and Heyman, ii. 348.

<sup>l</sup> What for the purposes of the registration is considered a rainy day, was explained last month.

<sup>b</sup> Mishna, Sheevith, iii. sec. 4.

<sup>e</sup> Mishna, Bava Kama, cap. 7. ad fin. and Gloss.

<sup>g</sup> Egmont and Heyman, ii. 348; D'Arvieux, vi. 468; Korte, 45.

<sup>i</sup> Russell, i. 91.

<sup>c</sup> John x. 1—5.

<sup>k</sup> Des Hayes, 440.

orange-tree requires protection in winter at Aleppo—which we know it does not on the coasts of Palestine, or at Damascus, although there are parts in the interior where it would probably not live through the winter. This, however, proves no more than that there are *parts* of Palestine some degrees less cold in winter than Aleppo.

Dr. Russell says, in another place, that the rigour of the winter is supposed to commence about the 20th December. The natives make an alteration in their clothing immediately after the second rains; but few of them use fires, and then only in the depth of winter, when the season happens to be unusually severe. Not to add any further testimony about rain, we may mention that different travellers in the first three weeks of this month describe the weather as occasionally fine and the air warm in different parts of Palestine. Gumpenberg, at Jerusalem, on the 6th, 10th, 11th, and 16th, experienced weather which he describes as almost equal to that of May in our latitudes;<sup>a</sup> but from that up to the 22nd and 27th the weather was alternately warm and cold, and after that decidedly cold. The cold at the end of the month, in some of the more elevated quarters, is shown by the fact recorded by Schulze, of two young men who were frozen to death at Nazareth.<sup>b</sup>

TREES, as remarked already, do not lose their leaves until the beginning of December.

THE VINE.—Korte affirms that grapes even yet remain on the vine in many parts of Palestine.

GRAIN.—The ploughman and the sower are still at work.

ESCULENT VEGETABLES.—Various kinds of pulses are sown in this month. Sugar-canes are cut down this month in Cyprus,<sup>c</sup> and probably therefore in Syria. Dr. Bowring, in noticing the partial culture of this reed at Beirout, remarks that there seems no reason to doubt the aptitude of the soil for its culture, in many parts of the country.<sup>d</sup>

PLANTS.—The rains have called forth the power of life in various plants, which had been scorched by the drought of summer. This is peculiarly the case with the bulbous plants, some of which commence to flower towards the end of December. The plants of this class mentioned in January are of the number. Monconys saw anemones in flower on the last day of December in a green meadow near Tripoli;<sup>e</sup> and Rauwolf found violets in blossom at Aleppo.<sup>f</sup> The grass and herbs which had been burnt up by the continued drought, are also quickened by the rains, and give a verdant aspect to the lately brown and desolate plains. And now or before the Arabs descend with their flocks from the mountains, and hasten to the “green pastures” of the plains and deserts.

FUEL.—Since we have now reached the season of cold, we may very suitably introduce some notice of the sorts of fuel now and formerly employed in the country.

The recent discovery of *coal* in Lebanon has before been noticed in this work. We have now the pleasure of adding the further and more recent information supplied by Dr. Bowring's ‘Report:’—

“I visited the coal-mines on Mount Lebanon, which the pasha is working. The difficulty of access and consequent cost of transport must make the undertaking one of very doubtful result. The descent is long and precipitous from the village of Cornail, and the mines appeared in a very unsafe state, for our candles were frequently extinguished, and the oppression of the atmosphere was great. The galleries enter the mountain horizontally. The quantity of coal is considerable, but rather of a sulphureous quality. The number of workmen is 114, who are paid 3 piastres each=7½*d.* per day, and who work in two relays, both day and night. The whole of the operations were under the direction of an Englishman (Mr.

<sup>a</sup> Gumpenberg, Th. i. 446, 447; Monconys, ii. 82, 110.

<sup>d</sup> ‘Report,’ 17.

<sup>e</sup> Monconys, ii. 3.

<sup>b</sup> Schulze, v. 360.

<sup>c</sup> Cotovic, 137.

<sup>f</sup> Rauwolf, 118.

Bretell), but he has been superseded by a Turk, who appeared to have but little knowledge or experience to fit him for the discharge of his duties. The quantity of coal extracted in 1837 was 14,700 cantars of 217 okes, each making about 4000 tons."

Coal has certainly not at any previous time been in use in any part of Syria. In the want of this substantial article of fuel, the inhabitants of Palestine, and indeed of most of the Western Asiatic countries, are driven to the sparing use of fires in winter, and to the employment of any article that can be used for fuel, which is not too valuable to be so appropriated. It is true that Palestine is now, and was still more in ancient times, a wooded country as compared with many others—with Egypt for instance. But still, in these old-established countries, wood to be used for fuel is not much to be expected—the trees which do grow being too valuable for their timber or their fruit to be so appropriated; and the yearly waste of their twigs and branches cannot go very far in such uses. However, wood, either in its crude form, or as charcoal, is still, and was anciently, chiefly employed in the towns, except by the poorer classes. But the truth is, that fires are used but very inadequately in winter,—so inadequately that, speaking from some experience of Eastern countries, we would venture to say that an Englishman is likely to suffer far more from cold in the mildest winter climates of Western Asia than in his own land. Warm in-door clothing, and crowding around miserable and unwholesome braziers of charcoal, are the chief remedies. Open fires of wood or ought else, or even chimneys, are rarely found save in the kitchens, and among the poorer classes and the peasantry, who must warm themselves with the same fires at which they cook their victuals. These usages are ancient. The use of the brazier and of charcoal is clearly intimated in the Scriptures, as the reader will perceive who recollects that by "coal," which often enough occurs in our version, is always to be understood<sup>a</sup> either charcoal, or the glowing embers of a wood fire. Russell states that the quantity of raw wood burnt at Aleppo is very small as compared with that of charcoal.<sup>b</sup> Wood is sold by weight.

Brushwood is very extensively employed where it can be obtained, particularly in places bordering on rivers. Even where other fuel is not difficult to obtain this is preferred for heating ovens. Thorns and such matters are employed for those culinary purposes which require haste, particularly for boiling, which illustrates Solomon's allusion to "the crackling of thorns under a pot;"<sup>c</sup> and the other references to fires of thorns.<sup>d</sup>

In treating of the various kinds of grain, etc., under the month of September, we had constant occasion to mention the use of the stalks for fuel. In fact, in the prevailing scarcity of fuel, the stalks of all plants that can be made available, and have no use of greater importance, are carefully and anxiously collected for fuel,—the withered stems of herbs and flowers, the tendrils of the vine, the small branches of various woody shrubs, and various other matters, even to the parings of fruit, are collected for fuel, and are much used in heating baths and ovens. Our Saviour, after directing the admiring attention of his auditors to "the lilies of the fields," manifestly includes *them* in the destiny of "the grass of the fields, which to-day is, and to-morrow is cast into the oven."<sup>e</sup>

The dried dung of animals is also much used for fuel, particularly in cookery. In many parts it is quite the principal fuel of the peasantry and the inhabitants of small towns; and towards the approach of winter, the traveller will note large heaps of it, piled up in the court-yards, or on the roofs of the cottages, bearing evidence of the diligence with which the females had, during the past months, laid in their stock of winter fuel.

It is the business of the children, and particularly of the young girls, to make this collection.

They go forth into the roads, haunt the resting-places of travelling parties, and frequent the neighbourhood of stables, etc., to pick up whatever animal dung may fall in their way. Whatever they obtain they deposit in their baskets to take to the women, who make it up into cakes. Our cut (copied from the great work on Egypt) exhibits the process followed in that country, which is the same precisely that we have had occasion to notice in different parts of Western

<sup>a</sup> The *brazier* is the original of the word "hearth," in Jer. xxxvi. 22; also in Zech. xii. 6.

<sup>b</sup> Russell, i. 38.

<sup>c</sup> Eccles. vii. 6.

<sup>d</sup> Psalm lviii. 9; cxviii. 12; Isa. xxxiii. 12.

<sup>e</sup> Matt. vi. 28—30.



[Collecting Dung for Fuel.]

Asia. Here are two females, who carry upon their heads their baskets made of date-leaves, full of what they have collected; a third makes the dung-cakes, by breaking up the dried dung, and preparing it with a little water, chopped straw, and dust. It is then made into thin and round cakes, which are *stuck up* against the wall of the cottage until perfectly dry. A cottage, with its walls thus garnished, is a very common spectacle, and offers to a European eye an appearance more singular than inviting. Nevertheless this is a very good article of fuel—a fact of which our own peasantry are not ignorant. The dung-cakes, when well ignited, give a light flame, and strong heat, without much smoke, and without so strong a smell as might be imagined. It gives forth a strong heat long after the mass is reduced to ashes. It is this quality which makes dried cow-dung useful to our own peasantry in baking their bread.<sup>a</sup> It is preferred for the same use by the peasantry of Egypt and Asia, and the principal passage of Scripture which refers to the employment of animal dung for fuel points to its use in baking bread.<sup>b</sup>

<sup>a</sup> We allude to the custom in the south-west of England, where the peasantry bake their loaves upon the hearth, covered by an inverted iron "crock," over and around which burning cow-dung, &c. is piled. From the long retention of the heat in this fuel, large loaves are thus baked exceedingly well.

<sup>b</sup> Ezek. iv. 15.



## APPENDIX.

We shall probably find no place more suitable than the present for the introduction of some particulars respecting the present condition of Syria, which is of importance to preserve in the present work, but which have been received (through Dr. Bowring's 'Report,') too late to be incorporated in the previous pages.

*Population.*—A note on this subject has been given at p. cccxxviii. The population of Syria is there computed at a million and a half, as the average of different estimates. Then, as the computed superficies of Syria is 50,000 square miles, this gives *thirty* inhabitants to the square mile. Mr. Consul Moore, although he reckons the population at two millions, remarks:—

“ Syria is a country whose population bears no proportion to its superficies; the inhabitants may be considered, on the most moderate calculation, as reduced to a tithing of what the soil could abundantly maintain under a wiser system of administration. The actual number of inhabitants cannot be given with any degree of accuracy. A census is unknown here, and information derived from other sources fallacious. It is chiefly from personal observation that any correct information can be collected.”

The population of the towns in Syria exceeds in all proportion that of the country, owing to the greater security which the towns afford to the inhabitants. Mr. Moore supplied Dr. Bowring with the following estimate of the population of some of the towns of Syria; but he considered this estimate as merely approximative:—

<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">Damascus from . . . . .</td> <td style="width: 35%;">100,000 to 110,000</td> </tr> <tr> <td>Aleppo from . . . . .</td> <td>60,000 to 85,000</td> </tr> <tr> <td>Hamah . . . . .</td> <td>44,000</td> </tr> <tr> <td>Tripoli . . . . .</td> <td>15,000</td> </tr> <tr> <td>Beirut . . . . .</td> <td>12,000</td> </tr> </table>	Damascus from . . . . .	100,000 to 110,000	Aleppo from . . . . .	60,000 to 85,000	Hamah . . . . .	44,000	Tripoli . . . . .	15,000	Beirut . . . . .	12,000	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">Jerusalem . . . . .</td> <td style="width: 35%;">10,000</td> </tr> <tr> <td>Latakia . . . . .</td> <td>5,000</td> </tr> <tr> <td>Nazareth . . . . .</td> <td>2,000</td> </tr> <tr> <td>Bethlehem . . . . .</td> <td>1,500</td> </tr> </table>	Jerusalem . . . . .	10,000	Latakia . . . . .	5,000	Nazareth . . . . .	2,000	Bethlehem . . . . .	1,500
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Bethlehem . . . . .	1,500																		

**CLASSES OF INHABITANTS.** *Mohammedans.*—Of the different classes composing the population of Syria, the Mohammedans are the most numerous. Dr. Bowring's information led him to conclude that they comprise, probably, three-fourths of the whole; they occupy a considerable part of the agricultural districts, are the principal inhabitants of the secondary towns and villages, and fill the high places, with some few exceptions, in the superordinate and principal cities. They no longer possess the peculiar immunities or privileges which formerly belonged to their race; in fact, the right of being enrolled in the armies of the government, which was once their greatest pride and honour, has become their greatest grievance. The Mussulman population are seldom associated with the progress of arts or industry, and, though possessing the influence which belongs to the ruling authorities, are rarely instrumental in the creation of the capital or the diffusion of civilization.

*Christians.*—Most of the commercial establishments are either in the hands of the Christian or Jewish population. The Mussulmans exclaim loudly against the taxes to which they are subjected, and above all against the conscription. The Christian merchants in Syria complain of the heavy imposts to which they are subjected, but say that their general condition is much improved under Ibrahim Pasha's government; and especially state that they are subject to no vexations on account of their religious opinions or rites. The taxes, though very serious in amount, are equitably levied, and the irregularities and extortions which were formerly so frequent, are now of rare occurrence. With the exercise of their religious usages, however openly exhibited, there is now no interference, still less is there any interference with their opinions. There are in Mount Lebanon some districts which are wholly occupied by Christians.

*Jews.*—The Jews in Syria are numerous; the great majority of them are poor, but in some of the larger towns they are among the most opulent of the inhabitants. This is the case at Damascus and Aleppo, where many of the consuls belong to the Hebrew nation, living in considerable splendour, and exercising very great influence. Dr. Bowring visited some of the Jewish families, and found the females adorned with a profusion of diamonds, and surrounded by the delicacies and luxuries of the highest orders of society. The wealthiest among them are bankers and money-lenders, and the very high rate of interest which is paid soon augments the capital employed, and, as expenditure is seldom on a large scale, the accumulation of property becomes rapid. There are a few villages, such as that of Djobar, for example, near Damascus (close to Elijah's cave), in which the Rabbi told Dr. Bowring the population consisted of 1000 persons, and that they were all of them Hebrews. The synagogue had been robbed a short time before he visited the place, but they did not attribute the robbery to any religious animosity. On inquiry whether they had any persecution or oppression of which to complain, they answered that the government behaved towards them with perfect tolerance.

*Armenians.*—There are a large body of Armenians in Syria, particularly in Aleppo and the towns of the north. They are among the most active of the inhabitants, and are to be found in all grades of society, from rich bankers and merchants to domestic servants and coffee-house keepers. Their wives and families are for the most part in Armenia, with whom they preserve a regular correspondence, and with whom there are so many pecuniary transactions, generally in the transmittal of money to Armenia, that there are a considerable number of Armenians in Syria whose principal business it is to negotiate or cash the bills which are drawn on Aleppo from Armenia. The Armenians, though so much disposed to wander, frequently return home for a few months, and again set out on their travels, but look to their country as the place of their final settlement. On the whole, they are the most respectable class for punctuality and honesty,—generally trustworthy and trusted. The irregular profits they make are tolerably well defined; for example, an Armenian servant always adds something to the market-price of every article she purchases for her master; it is a recognised usage, of which nobody complains, unless the added charge is exorbitant. The Armenian would not hesitate to mention the amount of overcharge.

*Inhabitants of Mount Lebanon.*—The inhabitants of Mount Lebanon are an active and laborious race, who turn to good account such parts of their soil as are suited to agricultural production. Their personal bearing is far more proud and independent than that of the Syrians in general. In many parts of the mountain-range the land is laid out in terraces, much resembling the almost horticultural cultivation of Tuscany and Lucca. The agricultural instruments are rude; the plough is ordinarily drawn by a pair of oxen, the peasant being very dexterous in its guidance over the rugged surface. Large quantities of mulberry-trees grow at various elevations. There is also an abundance of olive-trees, some vineyard-grounds, much wheat and maize, and many gardens filled with vegetables. There is no part of Syria in which there is so obvious an activity—none in which the inhabitants appear so prosperous or so happy. There was formerly a considerable manufactory of gold and scarlet cloth at Deir el Kamr (the Druse capital), but it exists no longer.

*Druses.*—The Druses still wear a garment in which much gold is mixed with the woollen tissue, and which was understood to be a domestic manufacture. Looms are sometimes seen in their cottages, and they thus mingle (but not generally) the manufacturing with the pastoral life. They have also a manufacture of the high silver ornaments (or horns) which the women wear on their heads, and which are the distinguishing badge of wifehood. With few exceptions, almost every individual Druse, as indeed all the male population of Lebanon, are proprietors of land, and are engaged more or less with agriculture. The manner in which some of the water-courses are constructed, and are still kept in order, does great credit to the sagacity of the Druses. There are streams that flow many miles along the sides of the hills, that have been conducted through mountains perforated for their passage, carried over wide valleys by admirable aqueducts, and which irrigate large tracts of land in their progress.

*Arabs.*—The Arab tribes dwell, for the most part, either in the Desert or on the exterior ridge of Eastern Syria. There is of late years rather a tendency among them to engage in agricultural pursuits; and if taxation were light, and they could obtain security for person and property, in a generation or two Dr. Bowring thinks their predatory and wandering life would be exchanged for that of the peasant.

**AGRICULTURAL PRODUCE.**—The agricultural produce of Syria is far less than might be expected from the extensive tracts of fertile lands and the favourable character of the climate. In the districts where hands are found to cultivate the fields, production is large, and the return for capital is considerable; but the want of population for the purposes of cultivation is most deplorable. Regions of the highest fertility remain fallow, and the traveller passes over continuous leagues of the richest soil which is wholly unproductive to man. Nay, towns surrounded by lands capable of the most successful cultivation are often compelled to import corn for the daily consumption.

The principal articles of produce have occurred in the course of the preceding pages. Dr. Bowring has a large statement on the subject, from which the following list is drawn:—Cotton; silk; wool; goat's wool; olive-oil and olives; wine; madder; indigo; sugar; cochineal—Ibrahim Pasha has lately introduced the cochineal into the neighbourhood of Tripoli. The cactus, upon which the insect feeds, thrives very well in that district, and there appears every prospect of success. Tobacco; hemp; bees'-wax; scammony, which is scarcely ever obtained pure, being adulterated at almost every stage; soap, of which that of Nablous (Shechem) is highly esteemed in the Levant; barilla; sponge; iron; coal; salt, an article of great consumption in Syria; and saltpetre.

To these more important articles of export may be added wheat, barley, maize, millet, lentils, sesame-seed, and other produce, consumed principally by the inhabitants. The production of which the increased cultivation is most obvious is the mulberry-tree, for the use of the silk worm, which may be attributed to the demand for silk in every part of manufacturing Europe; but a considerable increase has also taken place in the cultivation of the vine, and plantations have been also made for the extension of the growth of the olive-tree.

**TENURE OF LANDS.**—When Syria was invaded by the sultan Selim, in the year of the Hegira 922 (A.D. 1514), all the lands and personal property fell to the conqueror; but the ruinous effects of this general confiscation being apparent, a law was established, that whoever should plant or build became proprietor on paying the miri a peppercorn rent, then first established. Such land as at that time remained waste is still the property of the government, and is annually farmed to the highest bidder. In Mount Lebanon almost every male inhabitant is a small proprietor of land. In the neighbourhood of Beirout there are also a great number of landholders, who, for the most part, cultivate the white mulberry-tree. Large proprietors there are few, except among the emirs of Mount Lebanon, some of whom have extensive lands, which they either cultivate for their own account, or let out to farming tenants.

**MANUFACTURES.**—Aleppo and Damascus alone retain a few relics of the manufactures for which Syria was once renowned. Of the manufactures in the two cities mentioned, those of silk and cotton are the chief; there is also a considerable manufacture and employment of gold and silver thread. In Palestine a great number of people get their living by working crosses, beads, rosaries, and amulets, and mother-of-pearl shells, which are brought generally from the Red Sea, and engraved with religious subjects, chiselled in relief. These usually represent saints, or some objects of devotion associated with the Holy Land. Among them are models of the holy sepulchre in wood, inlaid with mother-of-pearl; drinking-cups from the deposits of the Jordan, with verses from the Bible engraved on them, being nearly as black as ebony, and taking a fine polish. Of these, and other similar articles there was formerly a large sale in the market-place of Bethlehem, and in many parts of Jerusalem; but the Terra-Santa monks have lately taken the trade from the peasantry, whom they are said to have menaced with excommunication if they sold such relics to travellers. The monopoly of the trade is now in the hands of the monks, and they obtain monopoly prices.

**CONDITION OF THE LABOURING CLASSES.**—On this subject the British Consul at Beirout reports: “If left to themselves and allowed unmolested to turn to the best account the natural fertility and riches of the country, the condition of this class would be highly favourable. But this cannot be considered as the case where their services may and are called for as often as the government require them, and for which they are always inadequately paid; they are likewise frequently sent from one part of the country to another wholly without their consent.

“The fellah, or peasant, in Syria, earns little more than a bare subsistence.”

Dr. Bowring himself states that in Syria a great portion of the labour is done by females. They are constantly seen carrying heavy burdens, and, as in Egypt, a large portion of their time is employed in fetching water from the wells for domestic use. They bring home the timber and brushwood from the forests, and assist much in the cultivation of the fields. The Christian women of Palestine go unveiled. They are a robust, and, generally speaking, a very handsome race.

**FOREIGN TRADE.**—The foreign trade of Syria has considerably increased of late years (under the government of Ibrahim Pasha). The English trade has made more progress than all the rest; and the trades of Tuscany and Greece have also made considerable progress. The French and Sardinian trades have diminished; and this is ascribed to the preference given by the Syrians, indiscriminately to all sorts of British manufacturers.

In 1835 the value of the exportations was 29,270,200 piastres, the importations 48,210,600, leaving a difference against Syria of about twenty millions of piasters, or a million of dollars, which she must pay in hard money, or in ingots of gold or silver, &c.

**REVENUE.**—The accounts furnished by the Syrian government, whether of revenue or expenditure, can only be considered as approximative. However, the revenue for 1835 is stated at about 640,000*l.*, for the year following 696,000*l.*; and Mr. Consul Werry (Aleppo) was led to conclude that it has since increased to 840,000*l.*

**EXPENDITURE.**—This much exceeds the revenue. The ascertained expenditure is 118,773,000 piasters, or about 1,197,000*l.*; and this is supposed to be raised by other expenses to not less than 130,000,000 of piasters, about 1,300,000*l.*, leaving a deficit of about 50,000,000, or 500,000*l.* per annum to be supplied from the resources of Egypt.

## CHAPTER VIII.

### ZOOLOGY.



(Camels.)

There is some difficulty in dealing with the zoology of so small a country as Palestine, or even as Syria. There are, properly speaking, no animals but such as are also common in some other countries, and most of them in Europe. To describe the forms, or to report the characteristics, of such animals as occur in the country, would be a work of great supererogation, since the same details would be equally applicable to the same animals in other countries. And while the animals are the same as elsewhere occur, it is not to be expected that within so contracted a region, many of them should exhibit any very peculiar or distinguishing characteristics, which might be adduced as more particularly applicable to Palestine. Under this view, it might perhaps be really the best course merely to enumerate the animals which are found in the country, leaving the reader to seek in books of natural history for the descriptions and details. But it is probable that a large portion of our readers would disapprove of this, and the work might seem incomplete without such information as is usually given under similar circumstances; and we have therefore devoted the present chapter to such details respecting the animals of the country as we have been able to collect, avoiding, however, as far as possible, the production of such facts or details as equally apply to the same animals in all other countries where they exist.

After the statements contained in the introductory chapter, it is scarcely necessary to apprise the reader that the sketch on which we are about to enter has no *necessary* connection with what is called the Natural History of the Bible. It is our purpose only to give some particulars respecting the animals which actually have been noticed in Palestine; but when the identity of the species which at any time engages our notice with a species mentioned in the sacred books is obvious or established on sufficient grounds, we shall have much satisfaction in pointing out the circumstance, and in availing ourselves of the information which the connection supplies.

Since some plan is necessary, we shall enumerate the species which engage our notice in the order exhibited in Cuvier's *Règne Animal*.

### MAMMALIA.

The *Bat* was known among the Hebrews by the significant name of אַטְלֵפֶה *attaleph*, or "the fier in darkness"<sup>a</sup> from its nocturnal activities.<sup>b</sup> A thing consigned to desolation or oblivion is said to be "cast to the moles *and to the bats*," with a reference to the partialities of the animal for dark caverns and ruined or desolated buildings. Yet bats are far more common in towns than in our colder climes. After sunset they are observed flitting about the court-yards of houses, the bazaars, and streets, in considerable numbers, when the swallows, which fill the air towards evening, have retired. An observation which we made ourselves *beyond* the Euphrates is probably applicable in Syria. The bats there establish themselves freely in inhabited rooms, where they cluster in considerable numbers to the ceiling by day, and where they even hibernate. The room in which the writer usually sat was vaulted in numerous coves, uniting at the apex, which was always in winter, and always except for a portion of the night in summer, occupied by a dense cluster of some ten or twelve bats. The room had six windows, four of which were glazed, but the other two had only bars and shutters—the former sufficiently wide asunder to allow the bats to pass in and out. The clustered mass, being nearly of the same colour as the walls, attracted little notice; but one who watched it closely soon became apprised of its nature by observing a head occasionally thrust out, or a leg with which the animal scratched itself. It was very difficult to disturb them, or to compel any of them to detach themselves from the mass; and when they did so, they almost immediately flew back and settled themselves again. Their presence in a room was attended with little other inconvenience than was occasioned by what dropped from them, and by which, indeed, their inhabitation was first detected.

Russell notices only two varieties of the bat in Syria. One of these is the common bat;<sup>c</sup> the other he does not name. It is white, and the ears are larger than those of the other; but as this is true of several species, the description does not enable us to identify it.

*Hedgehogs* are found abundantly in the fields, and are employed only for medicinal purposes. The use of the flesh is prescribed by the native doctors in lingering disorders occasioned by sudden frights. Buffon doubts that hedgehogs ascend trees, as also that they employ their prickles to bear away grapes; on which Russell remarks, "I have never seen them on trees, but I have certainly seen them transporting grapes upon their prickles as well as mulberries." This we are not prepared to deny; but seeing that hedgehogs are insectivorous, it might be questioned whether the grapes and mulberries did not adhere to their prickles by accident. The natives regard the hedgehog and porcupine as of the same species. The animal in Syria is of our common species.<sup>d</sup>

*Moles* occur in the commons, fields, and gardens, and are commonly destroyed on account of the damage they commit. Their extreme abundance on the plain of the coast is noticed by Hasselquist who declares that he had never seen any ground so cast up by moles as in the plains between Rama and Jaffa. There was scarcely a yard's distance between each mole-

<sup>a</sup> The word occurs in Lev. xi. 19; Deut. xiv. 18; Isa. ii. 20; Baruch vi. 21.

<sup>b</sup> The animal is well defined in the passage which interdicts the use of it for food:—"Moreover, the *attaleph*, and *ev. ry* creeping thing that *fieth*, shall be unclean unto you" (Deut. xiv. 18, 19).

<sup>c</sup> *Vespertilio Murinus*.

<sup>d</sup> *Eriacus Europæus*.

hill.<sup>a</sup> The Arabic name is *khuld*, the identity of which with the Hebrew *חולד choled*, suggests that the animal named in Lev. xi. 29, and there translated "weasel," is really the mole, rather than the word so translated in the succeeding verse.

*Bears* appear to have been in ancient times rather common in Palestine,<sup>b</sup> and to have been much dreaded by the inhabitants for their ferocity. From the passages cited in the note it would appear that they infested the roads, and even the neighbourhood of towns. They have now become rare. The name of the animal scarcely ever occurs in modern travels, but more frequently in those above two or three centuries old. The bear is now almost confined to the mountains, and their environs, particularly those of Lebanon. The existence of bears in the mountains of Palestine, and in the country about the sources of the Jordan, is noticed by Seetzen. La Roque states that in his time they were sufficiently abundant upon the higher Lebanon mountains, from which they descended by night in search of prey, to occasion serious apprehension to travellers. More definite information is supplied by Hemprich and Ehrenburg, who in their *Symbolæ Physicæ* furnish a figure of a female bear killed by them near Bischerre in Lebanon; the annexed engraving is copied from their figure. This animal was neither old nor young, and measured from the nose to the tip of the tail about four feet two inches, the tail being six inches. The stomach was empty. The travellers saw the animal's den (where there was much bear's dung), formed by large fragments of calcareous rock which appeared to have been casually thrown together. The flesh was tasted, and found to be sapid, but the liver was sweet and nauseous. These naturalists supply the further information, that during summer the bears of Lebanon remain in the vicinity of the snows, but descend in winter to the neighbourhood of the gardens and villages. The Syrian bear frequently preys on animals; but for the most part feeds on vegetables. The fields of *cicer arietanus* (chick-pea) and of other crops are often laid waste by it. The gall of the bear is held in much esteem: the skins are sold, and so is the dung (under the name of *bar-ed-dub*)—the latter being used as a medicine for diseases of the eye, both in Syria and in Egypt.



[Syrian Bear - *Ursus Syriacus*.]

The Syrian bear is described as of a uniform fulvous white (sometimes variegated with fulvous); ears elongated, forehead but slightly arched, fur woolly beneath, with long straight or but slightly curled hair externally, a stiff mane of erected hairs, about four inches long, between the shoulders. Russell does not appear to have known that there were native bears in Syria, as he only remarks that "*the bear*, baboon, and several species of apes, which are occasionally shown in town [Aleppo], are brought from Barbary and other distant parts."

*Polecats* are found in the neighbourhood of the villages, but are rarely seen in towns. The skin is of no value in Syria, as the people have not, as in Europe, any means of divesting it of its unpleasant smell.

*Dogs*.—Since the dog was anciently regarded by the Jews as an unclean beast, as it is now by the Moslems, it happens that Palestine is the country in which this animal has the longest

<sup>a</sup> Hasselquist, 120.

<sup>b</sup> 1 Sam. xvii. 34, 36, 37; 2 Sam. xvii. 8; 2 Kings ii. 24; Prov. xvii. 12; xviii. 14; Isa. xi. 7; lix. 11; Lam. iii. 10; Hos. xiii. 8; Amos v. 19.

been refused that entire domestication with man which he has enjoyed in most other lands : in other words, the treatment of the dog has, almost always in Palestine, been such as it has only in other countries been subject to since the propagation of the Moslem faith. And since the ideas concerning dogs have been much the same with the ancient Jews and the modern Moslems, there is no doubt that the existing practices of the latter illustrate the ancient practices of the former. Among both we trace the despised but not maltreated dog of the streets ; and among both we discover that, with every predisposition to do without them, certain breeds of the dog have forced their services upon man from the indispensable nature of their help in hunting and in guarding the flocks.

*The Street, or Bazaar Dog.*—Having observed considerable differences in the species of dogs which infest the towns in different parts of Western Asia, the present writer was induced to make



[Street Dogs. After Laborde.]

some inquiry on the subject of Lieut. Col. C. Hamilton Smith, and on this high authority is enabled to state that "The street or bazaar dog of Western Asia is a mixed race ; at Constantinople and in Natolia bearing more the character of lean and shabby curs, and as we proceed southward and to Egypt, assuming more and more the form of mongrel greyhounds and ill-grown lurchers. This is natural, for they follow the caravans. There are of this kind several packs that regularly leave Cairo, and are Hadjis quite as holy as the bipeds, for they come back and start again the next season. I believe these (pilgrim) dogs are found, when at home, in the tombs of the Mameluke princes at Cairo. A great number are nearly destitute of hair, and the whole Egyptian tribe of them is liable to want a part of their teeth. I have no doubt that these dogs existed already in the time of Moses, and are indicated in Exodus (xxii. 31), where they are said to feed on carcasses outside of the camp."

The condition of these dogs is the same in all Mohammedan towns, and, as we have suggested, was the same, doubtless, among the ancient Jews. Their numbers in the principal towns of Western Asia are very great ; and they seem greater in proportion than they really are, from the fact that all which the town contains are seen in the streets ; none being, as in Europe, harboured in courts and houses. Indeed, the Moslems of the dominant sects count themselves defiled if a dog but touches their garments,—a fact which seems perfectly well known to the animals themselves—at least they know that they are not to come in contact with the clothes of persons in the street ; and the careful attention with which they avoid doing this, even in the most crowded streets, is truly admirable. Through this mutual avoidance, the defiling contact occurs too rarely to occasion much annoyance to the inhabitants from the abounding presence in their streets of animals which they consider unclean. Indeed, dogs are not by any means excluded from a participation in the kindness which the Turks, at least, exhibit towards all animals. Some charitable persons make a regular allowance to the butchers and bakers, to make a daily or

periodical distribution of food among the dogs of the district. The fact that they are to receive such donations soon becomes well known to the dogs, who repair with great punctuality to receive them at the appointed times. At Constantinople there was formerly a government officer, whose business it was to see the dogs fed at the public expense. Many persons have left money by their wills for providing food for a certain number of dogs. The animals litter generally in the bye streets and in obscure corners; and we have noticed some small provision for the comfort of the mother and her young, in the shape of a little straw, or even a rude construction of boards: food also is sometimes placed near them at such times. They are protected by public opinion, which on different occasions has strenuously opposed all plans contemplated by the government for their removal or destruction.\* Yet, with all this, the peculiar and distinguishing unfitness of the dog to be anything less than the real companion of man, and the object of his care, is evinced by the generally miserable condition of the street dogs of Western Asia. From living constantly in the dusty streets, and from feeding on all kinds of offal, the skin of those dogs becomes foul and sordid, and from the supply of food being generally inadequate to their wants, their appearance is lean, starved and gaunt; and, considering that a large proportion are eaten up with a kind of mange, which sometimes degenerates into a sort of leprosy, they exhibit upon the whole a truly forlorn and battered appearance. Considering the heat of the summer, climate, and the thirst which the dogs then suffer, it seems strange that they are not subject to hydrophobia. Indeed, some distrust as to the popular ideas connected with that dreadful disease might be deduced from the fact that hydrophobia is least known in the warmest climates. In Constantinople cases of this disease sometimes occur, although they are exceedingly rare; but they become increasingly infrequent as we advance southward, and in Egypt are altogether unknown.

The dogs divide the town which they inhabit into quarters, the right of inhabiting and prowling over which is jealously guarded by the animals born in it. They make common cause against any presumptuous interloper, who seldom escapes without severe punishment. Franks, whom they distinguish by their dress, and particularly the hat, they seem to regard as much interlopers as strange dogs, and the Moslems are edified and amused by the antipathy they express. Travellers tell much of the danger to Europeans from the street dogs. This does not consist with our own experience, nor has any instance come to our knowledge. At night, indeed, they are apt to be troublesome, and a stout staff may not be found superfluous; but by day a stranger is liable to little molestation. Russell says that the street dogs at Aleppo bark and howl very loudly during the night. In the Psalms (lix. 6, 14, 15) there are allusions to the "noise" of the dogs when prowling about the towns at night in search of food: but that there were also barkless dogs, such as are not now uncommon in Western Asia, seems to be evinced by the metaphorical allusion to "dumb dogs that cannot bark" (Isa. lvi. 10).

In warm climates the street dogs render considerable service by the clearance which they make of the offal and carcasses of dead animals, which the inhabitants leave in the streets or throw into them. If not prevented, they will devour human bodies under such circumstances; and the expedition with which this work is performed cannot be more strikingly evinced than in the Scriptural instance of Jezebel, the whole of whose body, except the skull, hands, and feet, was devoured by the street dogs within a very little while after her death. The manner in which the dogs licked up the blood of her son Ahab will also occur to the recollection of the reader; and these, with other instances and allusions, render it probable that the dogs were anciently as common in the towns of Palestine as at the present day.

Another service which they render without being taught, is the guardianship of our property, which they spontaneously assume. "During the night," remarks Sonnini, "they are the terror of thieves. Upon the wharfs, boats, and timber, and in the interior of towns, goods are entrusted to their vigilance. An admirable instinct, a natural inclination to make themselves useful to man, induces them to assume a superintendence which nobody confides to them,

\* This applies particularly to Constantinople, where the number of dogs is reckoned at 40,000. See 'Brewer's Residence at Constantinople,' p. 122.



nobody points out to them, and it would be impossible to approach the property which these voluntary guardians have taken under their care."

*Hunting dogs* have an advantage over the street dogs,—*they have owners*, and are objects of care and attention; although it must be acknowledged that the more bigoted Moslems and constant inhabitants of large towns, do not much attend to the distinction in their favour. Except by such, the hunting dogs are not considered unclean—at least not to the extent that contact with them produces such ceremonial defilements as render ablutions necessary. In this case, therefore, the dog, from the indispensable nature of his services in hunting, has forced himself into a respectable position, and compelled man to accept his services and society, in spite of the strong prejudices against him. Against this Moses had no law. In fact he had none against dogs in general, more than against any other animal declared unfit for food or sacrifice—and in that sense only unclean. Even this exclusion of the dog is not by name, but by its being cut off by a line or rule which excludes a large number of animals without naming them. The law in itself does not declare the dog more unclean than the ass, of whose services the Hebrews freely availed themselves. The peculiar disrepute of the dog among that people must therefore be referred to other causes—and may possibly be founded on the inferences deduced from the passage which declares "the hire of a harlot and *the price of a dog*" (Deut. xxiii. 18) to be inadmissible offerings. It is possible that this passage rather refers to men stigmatised as dogs from their vile propensities, than to the animal itself. But even if literally understood, it intimates that dogs were private property, and objects of value to be bought and sold. With respect to hunting dogs in particular, we are aware of no passage which expresses the use of them; but their use in hunting is implied in the passage which precludes such game as was in itself fit for food to be used as such if "torn of dogs." This shows that dogs were used in hunting, and that game seized by them might be eaten, but not if they had mangled it. This was less a stigma on the dog, than a consequence of the law against eating blood. If mangled and killed by the dog, the game would be less completely exsanguinated than the law required; but if the dog seized and detained the game, without killing it before the huntsman was able to kill it with the knife, it was clean and lawful food. It is thus we understand the passage; and our understanding is deduced from the actual Moslem law on this subject, which, with many other laws, is obviously framed on the *practices* of the Jews, and which therefore embody Jewish interpretations of the Mosaic law.<sup>a</sup>

Before we proceed to speak of species, we introduce a cut, exhibiting the different species of dogs exhibited in the Egyptian monuments. This is very interesting, as affording a collection of dogs, most of which, probably all, were known to the ancient Hebrews. We hardly need mention that the Egyptians were so far from showing the Jewish feeling as to dogs, that they paid much attention to them, were careful of the breeds, of which they had several fine ones, and admitted them to the full benefits of domestication. Indeed, it would appear that dogs, or some kinds of dogs,

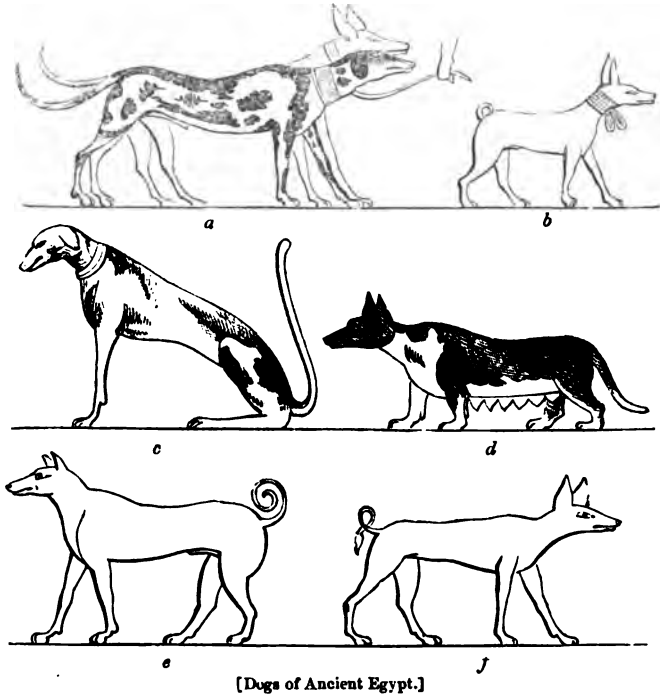
<sup>a</sup> The following are the *dicta* of Mohammed, which in a great degree determine the treatment of dogs among Moslems. They are collected from the authentic traditions contained in the *Mischat-ul-Masabih* :—

"Ibn-Omar said, the Prophet of God said, 'Whoever keeps a dog, except for the protection of his cattle, and except for hunting and for guarding his corn-fields, his rewards [in the future life] will be diminished to the extent of one *hirat*.' Jabir said, 'The Prophet of God ordered me to kill dogs, till I came to a village woman with her dog following her, and I killed it. After that his highness forbade killing dogs, and said, 'Kill only black dogs having white spots upon their eyes: for verily, this kind of dog is the devil.' Abdullah-bin-Mughaffal said, the Prophet of God said, 'If these dogs were not a herd of the herds, I would certainly kill them all; but now kill only the black ones among them.'"

In another place we have more particularly the rules which regulate the use of hunting dogs :—

"Adi-ibn-Hatim said, the Prophet of God said to me, 'When you send your dog in pursuit of game, repeat the name of God, as at slaying an animal: then if the dog holds the game for you, and you find it alive, then slay it: but if the dog has eaten of it, then do not you eat it, for the dog has taken it to himself. Then if you find another dog along with yours, and the game killed, do not eat of it; for verily you cannot know which of the dogs killed it: and if the other dog killed it, it may be so, that when he was let loose after the game, the name of God was not repeated.' Adi-ibn-Hatim said, I said, 'O Messenger of God, I let loose my trained dogs after game.' His highness said, 'Eat of the game which your dogs have kept for you, and have not eaten of.' I said, 'Although the dogs have killed it?' His highness said, 'Although it shall be killed.'"

Various *dicta* relating to dogs may be picked out of the large book containing these traditions. Here are two :—"Abuhura rah said, the Prophet said, 'When a dog drinks in the vessel of any one of you, then you must wash it seven times.'" And in one tradition it is mentioned that the first cleaning should be with earth. On another occasion Mohammed affirmed that angels would not enter a house which contained a dog—a declaration which certainly offers a very serious bar to the domestication of dogs in Moslem countries.



[Dogs of Ancient Egypt.]

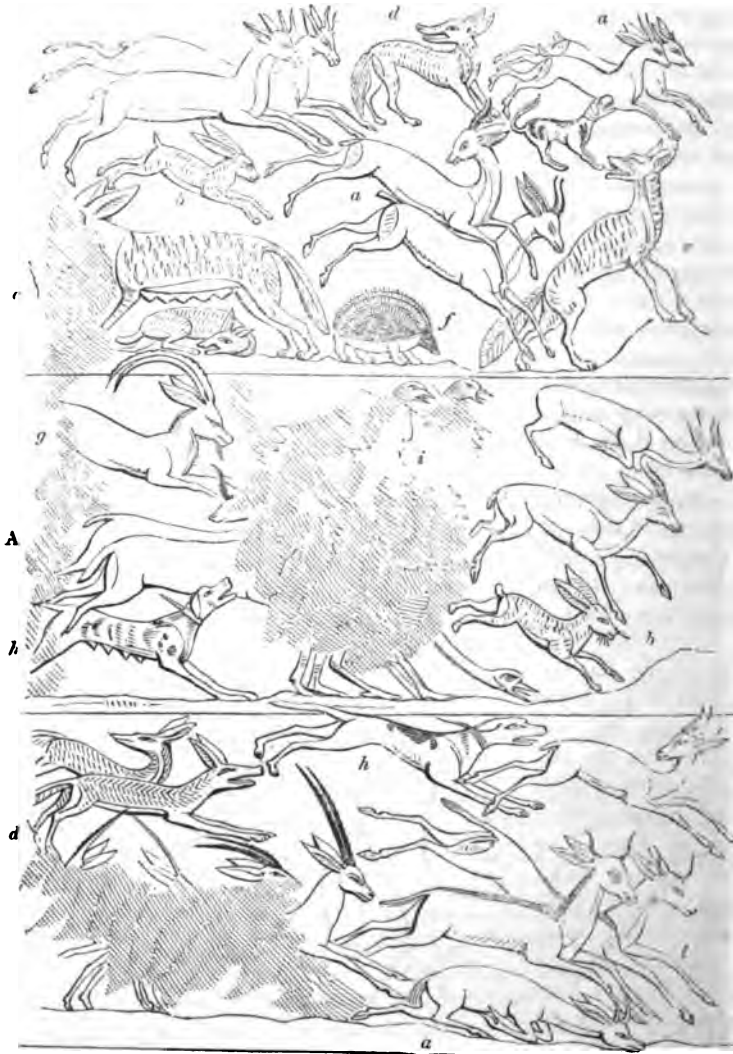
were regarded with superstitious veneration. The death of a dog was bewailed with great lamentations, and the remains of many were embalmed. The mummies of some of them are still found, and are mostly, Sir J. G. Wilkinson says, those of the fox-dog; meaning, we presume, the greyhound which forms fig. 3 of the cut at cclxvi. This fox-dog, and the hound (c) are of the most frequent occurrence on the monuments, and the author just named thinks it reasonable to conclude that the former (the fox-dog) was the parent stock of the modern red wild dog of Egypt, which is so common at Cairo and other towns of the lower country. That represented in fig. b was a favourite domestic dog, and appears to have been the one which was the most frequently admitted by the Egyptians into their parlours, or selected as the companion of their walks. There was also a short-legged dog (d), not unlike our turnspit, which, comparatively ugly as it is, appears to have been at one period a favourite in the house. e, we take to have been a watch and street dog. A dog not unlike it was the Roman house-dog, as shown by the an-



[Roman House-dog. From Pompeii.]

nixed engraving after a mosaic at Pompeii; and we may infer that the most common dog of Palestine was of this sort, from the allusion made by Solomon to the crooked or curled tail. The remainder are hunting-dogs, and bring us back to the class now under our notice. The hound (*c*) and greyhound (*a*) are unequivocally hunting-dogs; and the other (*f*) we infer to be such from seeing it sometimes in attendance on the huntsman.

*The Hound* in that cut deserves much attention. The likeness is given with spirit and character as those of animals usually are by the Egyptians. Col. Hamilton Smith, in his instructive work on dogs, considers it obvious that all breeds of hounds with round and long drooping ears, are originally descended from one race, if not from a distinct species of dog allied to the *Lycaon*, and derived from the East. He regards the pendulous ear as a gradual result of domestication, and adduces the figures on the Egyptian monuments in evidence of the extreme antiquity of that domestication in Egypt—long, very long, before hounds with deflected ears were known in



[An Egyptian Hunt.]

To the left of A was a chasseur in his chariot, shooting with the bow, now defaced; a, a, a, gazelles; b, hares; c, female hyena with its young; d, foxes; e, hyena arrived at the top of a hill, and looking back towards the chasseur; f, porcupine; g, ibex; h, hounds; t, ostrich, defaced; i, the oryx; i, wild oxen.

Greece. The same eminent zoologist gives a figure of the Oriental hound, being from a drawing of a Persian specimen. The hound of the Egyptian monuments he regards as essentially the same as this, and thinks it was introduced into Egypt from that country. "It is now," he remarks, "probably impossible to fix on the oldest form of the hound; but if we commence with the Elymean (or Persian) and take the figure of a leash-hound in the Egyptian pictures for a type, and the blood-hound, which is of most ancient estimation in the West, the dog which in sagacity, power, and olfactory acuteness, stood for ages pre-eminent over the whole, we find them sufficiently similar to each other, while the more delicate perceptions of several gun-dogs, although we think them superior, are a result of comparatively later care and training."

The present and ancient hound of Syria does not, to our knowledge, differ from that of Persia, or that figured on the Egyptian monuments. The ancient Hebrews doubtless employed this hound in hunting, after the same mode as the Egyptians. A hunt with hounds is shown in the preceding very curious engraving, which is the more interesting from its spirited representation of the various animals which were objects of the chase to that people. Of the hunts of the Egyptians, the following valuable information is given by Sir J. G. Wilkinson:—

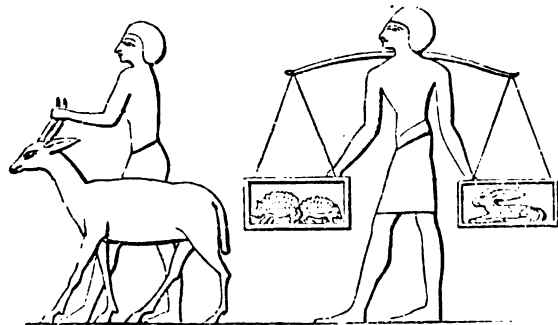
"The Egyptians frequently coursed with dogs in the open plains, the chasseur following in his chariot, and the huntsman on foot. Sometimes he only drove to cover in his car, and having alighted, shared in the toil of searching for the game, his attendants keeping the dogs in slips, ready to start them as soon as it appeared. The more usual custom, when the dogs threw off in a level plain of great extent, was for him to remain in his chariot, and, urging his horses to their full speed, endeavoured to turn or intercept them as they doubled, discharging a well-directed arrow whenever they came within its range.

The dogs were taken to the ground by persons expressly employed for that purpose, and for all the duties connected with the kennel, the *κυναγωγοι* of the Greeks, and were either started one by one or in pairs in the narrow valleys or open plains; and when coursing on foot, the chasseur and his attendant huntsman, acquainted with the direction and sinuosities of the torrent beds, shortened the road as they followed across the intervening hills, and sought a favourable opportunity for using the bow, or marked with a watchful eye the progress of the course in the level space before them. For not only was the chasseur provided with a bow, but many of those also who accompanied him; and the number of head brought home was naturally looked upon as the criterion of *his* good day's sport.

Having with eager haste pursued on foot, and arrived at the spot where the dogs had caught their prey, the huntsman, if alone, took up the game, tied its legs together, and hanging it over his shoulders, once more led by his hand the coupled dogs, precisely in the same manner as the Arabs are wont to do at the present day. This, however, was generally the office of persons who followed expressly for the purpose, carrying cages and baskets on the usual wooden yoke, and who took charge of the game as soon as it was caught; the number of these substitutes for



[Carrying home Game (an Oryx), with coupled Hounds.]



[Bringing home Live Game—Gazelle, Porcupines, Hare.]

our game cart depending of course on the proposed range of the chase, and the abundance they expected to find. Sometimes an ibex, oryx, or wild ox, being closely pressed by the hounds, and driven to an eminence of difficult ascent, faced round and kept them at bay with its formidable horns, and the spear of the huntsman, as he came up, was required to decide the success of the chase.

It frequently happened, when the chasseur had many attendants, and the district to be hunted was extensive, that they divided into parties, each taking one or more dogs, and starting them on whatever animal broke cover: sometimes they went without hounds, merely having a small dog for searching the bushes, or laid in wait for the larger and more formidable animals, and attacked them with the lance.

Besides the bow, the hounds, and the noose, they hunted with lions, which were trained expressly for the chase, like the *cheetah* or hunting leopard of India; but there is no appearance of the panther having been employed for this purpose, and the lion was always the animal they preferred. It was frequently brought up in a tame state, and many Egyptian monarchs are said to have been accompanied in battle by a favourite lion, as we learn from the sculpture of Thebes and other places, and from the authority of Diodorus.

The bow used for the chase was very similar to that employed in war: the arrows were frequently the same, with metal heads; but some were tipped with stone, which are represented in the hunting scenes of Beni Hassan and in many of those at Thebes. The method of drawing the bow was also the same; though, as already observed, the chasseurs sometimes pulled the string only to the breast, instead of the more perfect and more usual method of raising it, and bringing the arrow to the ear; and occasionally one or more spare arrows were held in the hand, to give greater facility in discharging them with rapidity on the "swift antelopes and wild oxen."

*Greyhounds.* The information supplied us by Col. Hamilton Smith, to the effect that the street-dogs of Western Asia approach nearer to the greyhound the further we advance to the south—that is, into Egypt—has already been adduced. This statement elucidates some of the observations which are contained in his published work,\* respecting greyhounds—"A race of which there exist representations above 3000 years old; one that, with little intermixture, forms the aggregate of the semi-wild unowned street dogs of Egypt and south-western Asia, bears a stamp of originality we cannot justly assume to be the offspring of crosses, or of a migration to a climate which produced its present very distinct form of body, and still greater singularity of head." And again: "Looking for the original residence of this race, and finding that in Egypt it existed in its present form at the dawn of history, not only as a coursing dog, but also that it formed already, and probably had long before constituted, a relinquished semi-feral race, living unowned, and totally upon its own industry, it might be assumed that Egypt is the country whence this dog was first carried to other regions." But he is of opinion, nevertheless, that its structure and qualities evince that it was intended to be the hunting-dog of open plains. Without following Col. Smith in tracing the origin of the greyhound, we return with him to Egypt, where he remarks, "It is not impossible that an original, independent species, with the above form and instinct, followed the moving nations in troops from a voluntary impulse, hung around their camps, as it did during the march of the Israelites towards Palestine, and was only rarely and partially domesticated among the southern nations, whose religious tenets in general still repel all contact with dogs."

The same zoologist, when he comes to notice the Arabian or Bedouin greyhound, describes it as a large and very fierce species, not perfectly pure, but greatly valued, and used by the wandering tribes not only for coursing antelopes, but to watch their tents and cattle. They have much strength of jaw, and are rufous, or white clouded with tan colour. The race of Arabia Petræa, figured in *silhouette* by Laborde, is smaller than this, with a long hairy tail, in the form of a brush, and with erect pointed ears. The whole animal much resembles the ancient Egyptian effigies, and also the present wild-dog of Egypt, the *deeb* of the natives, and

\* Dogs. Canide or Genus Canis of Authors. By Lieut. Col. Charles Hamilton Smith, K.H. and K.W. F.R. and L.S., forming vols. ix. and x. of Jardine's 'Naturalist's Library.'

*thous anthus* of Col. Hamilton Smith, to whom we are indebted for the annexed representation of this fine greyhound, which we take to be that with which the ancient Hebrews were best acquainted, and the same or very similar to that of their own country. Laborde himself, who coursed hares much with this greyhound while at Akaba, remarks that it is "slender in form and fleet in movement, strongly resembling those which are seen in Egyptian paintings. Russell's description of the greyhound in the northern neighbourhood of Aleppo is very indistinct. It appears to agree with this, or is perhaps a variety of it. He says that although reckoned fleet, it can seldom come up with a hare, unless assisted by a hawk.



[Greyhound of Arabia Petraea. From an original Drawing by Col. C. Hamilton Smith.]

*The Shepherd's Dog.* The afflicted Job speaks of those "whose fathers he

would have disdained to set *with the dogs of his flock*;" and as Job appears to have lived about the time of Jonah, this carries up the use of the shepherd or watch-dog to a very early date; historical probabilities as strong almost as facts would take the date to much

more ancient times. Soon after men found a profit in attending to flocks and herds, the use of the dog must have been discovered; and on the highest authority we learn that man became "a keeper of sheep" almost as soon as "a tiller of the ground." We will not contend, with some, that a dog attended the walks of Adam in Paradise; but that Abel, the first of shepherds, had his dog, is very likely.

The prevalent form of the shepherd-dog of Western Asia—including Syria and Palestine, is that of the Turkman watch-dog, for a figure of which we are indebted to the kindness of Col. C. Hamilton Smith, who in his book (where it is not figured) describes it as a large, rugged, and fierce race, equalling the wolf in stature, shaped like the Irish greyhound, and with equally powerful jaws. The ears are erect, the tail rather hairy,



[Turkman Watch Dog. From an original Drawing by Col. C. Hamilton Smith.]

their colour a deep yellowish red, "and so like a Natolian wolf, that a friend being present in Asia Minor at a wolf hunt, allowed one to pass out of a brake, because he mistook him for one of the Turkman dogs." Dr. Russell describes it only as "a stouter and better looking animal than the bazaar dog." It is of use not only in keeping the flock together, but in defending it

from the fox, or in giving an alarm in the night when attacked by more formidable beasts of prey. He is kept under strict command, and except when sent after stragglers, usually keeps close to the shepherd, who, it may be remarked, always marches *before* his flock, *leading* and *not driving* it along.<sup>a</sup>

To the *Wolf* and its characteristics there are numerous allusions in the Scriptures. That it lives upon rapine, is violent, cruel, blood-thirsty, voracious and greedy; that it is the great enemy of sheep, seeks its prey by night, and is very sharp of sight—are facts which might be learned from the sacred books. It was obviously common in Palestine in former times; and although not now of very frequent occurrence, there is no part of Syria or Palestine in which it is not found. It keeps to the woods and open country, and seldom ventures so near to the towns as the fox; but the villages as well as the flocks often suffer from their depredations. Morison numbers them among the wild animals of Samaria. Seetzen names them among the animals common near the sources of the Jordan. Lord Lindsay saw a wolf near Mount Carmel, and Monro in the plains of Philistia. Thevenot says they are frequent in the deserts of Arabia Petræa; but Burckhardt affirms they are scarce in Sinai.<sup>b</sup> This may be explained by Sir J. G. Wilkinson, who observes that the wolf and hyæna are seldom met with in unfrequented districts, (or in Egypt, at any great distance from the Nile) where they would suffer for want of food, and are therefore principally confined to the mountains lying at the most a few miles from the edge of the cultivated land. Once only he met with the wolf on the coast of the Red Sea, and few even of the watering-places in the interior of the desert are frequented by it or the hyæna.<sup>c</sup>

The same author informs us that the wolf is not gregarious in Egypt; which observation may probably be extended to Palestine, as we remember of no traveller seeing more than one at a time in that country. A similar extension may be allowed to his other remark, cited with approbation from Denon, relative to the comparative sizes of the animals common to Egypt and Europe—that the former are always smaller than our own species; “and this,” he adds, “is exemplified by none more strongly than the hare *and the wolf*.”

There is an animal of which travellers in Arabia and Syria hear much, under the name of the *Sheeb*, which the natives believe to be a breed between a leopard and a wolf. They describe it as being scarcely in its shape distinguishable from a wolf, but with the power of springing like a leopard, and attacking cattle. Its bite is said to be mortal, and to occasion raving madness before death. In 1772 Dr. Freer saw and measured the forepart and tail of one of these animals, and supplied Dr. Russell with the description which he has inserted in his book.<sup>d</sup> The animal was one of several that followed the Basrah caravan from Basrah to the neighbourhood of Aleppo. Many persons in the caravan had been bitten, some of whom died in a short time raving mad. It was also reported that some persons in the neighbourhood of Aleppo were bitten, and died in like manner; but the Doctor saw none of them himself. Dr. Russell imagines that the *sheeb* might be a wolf run mad. But this is a hazardous assumption, as it is doubtful that canine madness exists in Western Asia; and unless we conclude with Col. Hamilton Smith that the *sheeb* is probably the same as the *thous acmon*, or the wild wolf dog of Natolia, it is best to await further information on the subject. Burckhardt says that little doubt can be entertained of the existence of this animal, and explains its fabulous origin (between a wolf and leopard) by stating that the Arabs, and especially the Bedouins, are in the common practice of assigning to every animal that is rarely met with, parents of two different species of known animals.

*Jackals* are far more numerous in Palestine than either wolves or foxes. To quote from

<sup>a</sup> This is noticed repeatedly in John x. See in particular verse 4—“When he putteth forth his own sheep *he goeth before them*, and the sheep follow him; for they know his voice.” See also verses 3, 5.

<sup>b</sup> Morison, 222; Seetzen, 16; Lindsay, ii. 79; Thevenot, pt. i. p. 164; Burckhardt, 594; Russell, ii. 184.

<sup>c</sup> ‘Ancient Egyptians,’ iii. 29.

<sup>d</sup> Nat. Hist. of Aleppo, ii. 185. Sir J. G. Wilkinson mentions the *sheeb* and another unknown animal, the *aboomagar*, in such a manner as to apply to the latter what he intended to state of the former. Burckhardt’s statement respecting the *sheeb* (‘Syria,’ p. 534) supplies the power of correction.



[Jackals.]

the account of these animals given in Col. H. Smith's 'Canidæ':—"Jackals form a group of crepuscular and nocturnal canines, never voluntarily abroad before dark, and then hunting for prey during the whole night; entering the streets of towns to seek for offals; robbing the hen-roosts; entering out-houses; examining doors and windows; feasting upon all dressed vegetables and ill-secured provisions; devouring all the carrion they find exposed, and digging their way into sepulchres that are not carefully protected against their activity and voraciousness; and, in the fruit season, in common with foxes, seeking the vineyards, and fattening upon grapes. They congregate in great numbers, sometimes as many as two hundred being found together, and they howl so incessantly, that the annoyance of their voices is the theme of numerous apologues and tales in the literature of Asia. This cry is a melancholy sound, beginning the instant the sun sets, and never ceasing till after it has risen. The voice is uttered and responded to by all within hearing, in an accent of every possible tone, from a short hungry yelp to a prolonged crescendo cry, rising octave above octave in the shrillness, and mingled with dismal whinings, as of a human being in distress." Such dismal howlings of the jackals have attracted the notice of travellers in all parts of Palestine. Russell says they have been known to destroy infants in Syria, although the damage they inflict is usually confined to the poultry-yards and the gardens in the outskirts of the suburbs. They are silent by day, and never then appear in troops, although solitary individuals are often met with in the gardens, and always run away as if afraid. The colour of the animal is a dirty yellow, with brown ears. A detailed description of the Syrian jackal is given in Col. H. Smith's 'Canidæ.' It is singular that although these animals abound in Syria, there are none in Egypt.

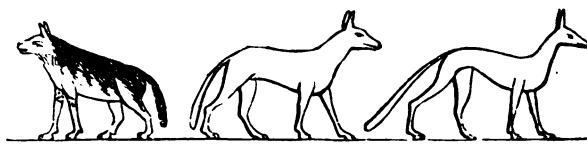
Interpreters have been much divided as to whether jackals or the foxes were the animals of whom three hundred were obtained by Samson in order to set fire to the standing corn of the Philistines, by means of fire-brands fastened between the tails of every pair. The original word שׂוּאָל, *shual*, has been considered to have much analogy with the proper native name, *shikal*, which the animal now bears. The question is difficult to decide. Hasselquist says that jackals are more numerous than foxes in Palestine, particularly near Jaffa, Gaza, and in Galilee: "I leave others to determine which of these two animals was the fox of Samson. It was certainly one of them."



[Syrian Fox. <sup>a</sup> From a Drawing by Col. C. H. Smith.]

his head."<sup>c</sup> The craft of the animal also supplies various allusions in the sacred writings. False prophets are so stigmatised;<sup>d</sup> and our Saviour called Herod, the tetrarch of Galilee, a fox,<sup>e</sup> in allusion to the wily and tortuous policy of that bad man. The fur of the fox is valued in Syria for common purposes, but the animal is rarely hunted for the sake of its skin.

*Hyænas* are not rare in Syria and Palestine; and the numerous fables concerning them, which are now exploded in Europe, are there articles of popular belief. The species (called by the natives *Dubbah*) which is found in Syria and Arabia is declared by Col. C. H. Smith to be the



[Hyæna.

Wolf.

Greyhound.

From Egyptian Sculptures.]

same with the hyæna of Persia and India [*Kaftaar* and *Hoondar* of those countries]. It is not larger than a powerful dog, and has the snout fuller and shorter than in some other species; the ears are long and pointed; the colour is a dirty white, with black bars.

Sir J. G. Wilkinson makes it known that the peasants of ancient Egypt "deemed it a duty as well as an amusement, to hunt and destroy the hyæna, and those animals which were enemies of the fields or flocks; and they shot them with the bow, caught them in traps, or by whatever means their dexterity or ingenuity could suggest. For though the hyæna is a carnivorous animal, it is not less hostile to the crops than to the flocks, when pressed with hunger; and the ravages they are known to commit in the fields of Indian corn and other produce make the peasants of modern Egypt as anxious as their predecessors to destroy them, whenever they have the opportunity or courage to attack them." In Syria they are equally hated and pursued, and for the same reasons; although it is probable, as Dr. Russell thinks, that much of the mischief ascribed to them is committed by jackals, foxes, and wolves. This same writer informs us that the hyænas may be distinguished at a considerable distance by their walking as if lame. They retreat when pursued, and do not attack the human species unless highly provoked, perhaps urged, by hunger. It is in the night that they chiefly prowl or venture to approach the village burial-grounds, although they are sometimes also seen in-

<sup>a</sup> Mouro, i. 88.<sup>b</sup> Sol. Song. ii. 15.<sup>c</sup> Luke ix. 53.<sup>d</sup> Ezek. xiii. 4.<sup>e</sup> Luke xiii. 32.

the day-time by the sportsmen. The peasants affirm that the animal is sometimes taken alive by a person who creeps into his den, and, throwing an *abba* [Arabian cloak] over him, secures him by fastening a rope about his legs. They allege (and it is not at all improbable) that the animal suffers himself to be bound without the least resistance, if the adventurer proceeds with proper dexterity and coolness. One form in which he must exhibit the latter quality, is by pronouncing certain words, which the animal is supposed to understand, and on which the man's safety depends. This story pervades eastern countries, with the necessary change in the language which the hyæna is supposed to understand.

The name of the hyæna does not occur in our public translation of the Scriptures. The word צבוע *tzeboea* of Jer. xii. 9 (rendered "speckled bird") is probably the hyæna, not only from the resemblance to the Arabic name (*dzuba*) of the animal, but because it is referred to by the Seventy, who could hardly have been ignorant of the meaning. This interpretation is adopted by most modern critics, and the passage is much improved in clearness by it,—

"As a fierce hyæna is my heritage to me."—BOOTHROYD.

In like manner "the Valley of Tzeboim" of 1 Sam. xiii. 18, is rendered "the Valley of Hyænas" by Aquila, Symmachus, and Theodotian. The hyæna is named once in the Apocrypha.<sup>a</sup>

*Lion*.—We may be excused for noticing an animal that does not now exist in Palestine, in consideration of the unquestionable evidence that it was once found there. This evidence is both historical and critical. Under the former class, Samson's adventures with a young lion on his way to Timnath,<sup>b</sup> and David's slaughter of "a lion and a bear,"<sup>c</sup> will be remembered, as well as its adoption as the symbol of the tribe of Judah,<sup>d</sup> and the allusion to its ferocity,<sup>e</sup> its terrible roar,<sup>f</sup> and its habit of sheltering among the brushwood which lines the Jordan, and of ascending thence when the river overflowed its low banks.<sup>g</sup> Critically, the intimate knowledge of this animal possessed by the Hebrews is indicated by the various names, distinctively significant of age and sex, which they applied to it. Bochart, after the Rabbins, arranges thus the seven names which mark the successive periods in the lion's life; and which may remind the reader of the seven stages into which Shakspeare divides the life of man:—

1. גור, *gor*, a lion's whelp.<sup>h</sup>
2. כפיר, *cephir*, a young, or newly weaned lion, able to leave the mother and seek prey for itself.<sup>i</sup>
3. ארי, *ari*, a full grown, strong lion, and therefore the name for a lion in the general, indeterminate sense.<sup>k</sup>
4. שחל, *shachal*, a lion in his prime, also one of darker colour than ordinary.<sup>l</sup>
5. שחצ, *shachts*, a staid and still powerful lion.<sup>m</sup>
6. לבי, *lebi*, an old lion;<sup>n</sup> the feminine of which לביא, *lebia*, is the name



[Lion of Arabia and Persia.]

<sup>a</sup> Eccles. xiii. 18.

<sup>b</sup> Judg. xiv.

<sup>c</sup> 1 Sam. xvii. 34, 35.

<sup>d</sup> Gen. xlix. 9.

<sup>e</sup> Isa. xi. 6.

<sup>f</sup> Prov. xix. 12; xx. 2; Amos iii. 8.

<sup>g</sup> Ps. i. 44.

<sup>h</sup> Jer. ii. 33; Ezek. xix. 2; Neh. ii. 12.

<sup>i</sup> Ps. xci. 13; Prov. xix. 12, &c.; Ezek. xix. 2, 3.

<sup>k</sup> Nah. ii. 12, &c.

<sup>l</sup> Job iv. 10; x. 6; Ps. xci. 13; Prov. xxvi. 13; Hos. v. 14; xiii. 7.

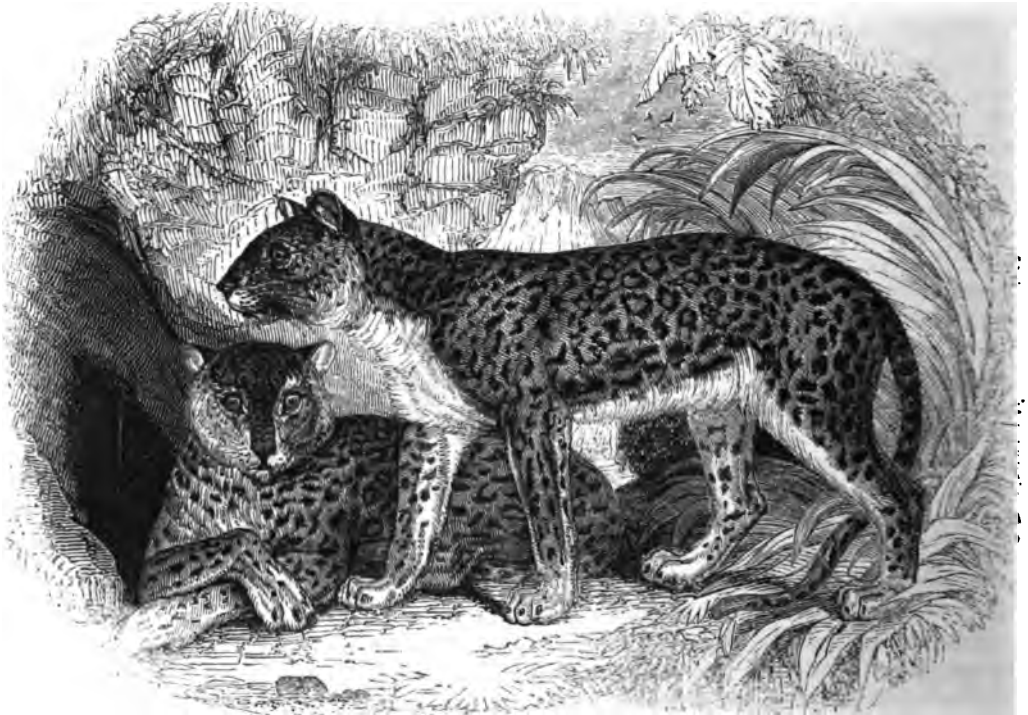
<sup>m</sup> Job xxviii. 8; xli. 25.

<sup>n</sup> Nah. ii. 13; Ps. lviii. 5.

for a fierce lioness.<sup>a</sup> 7. *לַיִשׁ*, *laish*, a decrepit lion, worn out with age.<sup>b</sup> Some points in this arrangement may seem dubious; but there is no doubt that all these terms are applied to the lion, and are designed to be expressive of discriminated conditions of its existence. Whether the Hebrews succeeded in taming lions, and in training them to render assistance in the chase, does not appear. The Egyptians did so. Lions were expressly trained for the chase, like the *cheetah*, a hunting leopard of India; but there is no appearance of the leopard or panther having been employed for this purpose; and the lion was always the animal they preferred. It was frequently brought up in a tame state, and many Egyptian monarchs are said to have been accompanied in battle by a favourite lion,—as we learn from the sculptures at Thebes and other places, and from the authority of Diodorus.<sup>c</sup>

It will surprise no one that lions are not now found in any part of Syria; nor will he for that reason doubt that they ever existed there. Lions are not now found in Greece or in Asia Minor, where they formerly abounded. In former ages Western Asia was well drained of its lions to supply the exorbitant demands of the Roman amphitheatre; and here, as elsewhere, the progress of population and civilization has driven them within narrower limits; and since guns, instead of spears and arrows, have been brought into the field against them, their destruction has been very rapid. The lion is not now found west of the Euphrates; and although it is not unknown on the banks of the Tigris, in the deserts of Arabia, in Persia, and the country beyond, eastward, it is not in any part of Asia of frequent occurrence, and in size and aspect is much inferior to the lion of Africa, which appears to be the true country of this noble creature, and that in which his highest condition is attained.

Various travellers in Palestine have noticed tigers, leopards, panthers, ounces—but by all



[Syrian Leopard.—*Felis simr.*]

<sup>a</sup> Gen. xlix. 9; Num. xxiii. 24; xxiv. 9; Deut. xxxiii. 20; Job iv. 11; xxxviii. 39; Isa. v. 29; xxx. 6, &c.

<sup>b</sup> Job iv. 11; Prov. xxx. 30; Isa. xxx. 6.

<sup>c</sup> Diod. i. 48; and the sculptures of Dayr, Medinat Abou, Kalabshi, &c. See Wilkinson, iii. 17.

these names one and the same animal is intended, and that is a *Leopard*. This we learn from the more definite information supplied by the figure which Ehrenberg has given. It is one of the most beautiful of its tribe. It is more in the southern maritime mountains of Syria—that is in and about Lebanon and in Palestine, than in Northern Syria. Stories are current of its depredations in the mountains, and of its attacking travellers in the night on the sea-shore, about the roots of Lebanon. It is among the animals of Mount Tabor,<sup>a</sup> and has been noticed near the lake of Tiberias.<sup>b</sup>

The leopard, under the name of נִמְרֹת, *nimr*, which it still retains, is frequently mentioned in Scripture, so as to show that it was in ancient times not uncommon in the country from which it has not yet disappeared. From its fierceness it is often found with the lion; and from the same character emphasis is given to the description of the blessedness of a coming time by the declaration that then “the leopard shall lie down with the kid.”<sup>c</sup> There are allusions to its lying in wait near towns<sup>d</sup> and beside the public ways<sup>e</sup> to surprise unwary travellers; as well as to the acuteness of the animal,<sup>f</sup> and to its spots.<sup>g</sup> Solomon speaks of “the mountains of the leopards;”<sup>h</sup> and in the Scriptural topography of Palestine, several names occur, which, being formed from the name of the leopard, (*nimr*) appear to intimate that the localities indicated were the peculiar haunts of these animals.<sup>i</sup> It is even not unlikely that “the mighty hunter” *Nimrod* derived his name from this animal.

About the *Lynx* we have some difficulty, arising from the obscurity and contradictions of travellers. We can only make out that there is a lynx,<sup>k</sup> but are left in doubt as to the species.

However, seeing that the caracal, or black-eared, or Persian lynx, is found in all the countries surrounding Syria—in Africa, Arabia, Persia, and Turkey, there seems little hazard in conjecturing that Palestine, or at least Syria, possesses this species. Dr. Russell says the animal is sometimes seen at Aleppo; but as it is then brought from a considerable distance, he does not reckon it as an animal of the environs; but this, it will be seen, does not weaken, but tends rather to establish the evidence for its being an inhabitant of Syria. We confess to a strong inclination to press also the *Chaus* (*Felis Chaus*) into this chapter. There is good proximate evidence for its existence in Palestine; but as we have laid down for ourselves the rule of ad-  
 ducing only positive and absolute facts, we will not, even for the sake of claiming the *Chaus* for Palestine, depart from it.



[Caracal.]

It seems remarkable that no mention is once made in Scripture of that pleasing and useful animal, the *Domestic Cat*. The Jews certainly never had any prejudice against this animal;

<sup>a</sup> Burekhardt (who calls it an ounce), 336; see also, 132.

<sup>b</sup> Mariti, ii. 327: he calls it a tiger, as does Rauwolf (70), who saw it in Lebanon.

<sup>d</sup> Jer. v. 6.

<sup>e</sup> Hos. xiii. 7.

<sup>f</sup> Hab. i. 8.

<sup>g</sup> Jer. xiii. 23.

<sup>c</sup> Isa. xi. 16.

<sup>h</sup> Sol. Song iv. 8.

<sup>i</sup> Such as *Nimrah*, Num. xxxii. 3; *Beth-Nimrah*, v. 36, and Josh. xiii. 27; *waters of Nimrah*, Isa. xv. 6; Jer. xlvi. 34.

<sup>k</sup> See Russell, ii. 188, 189.

and its complete domestication in Egypt would suggest that it could not well but be domesticated among the Hebrews also, and that they did not overlook its merits and services, with which they could not but be acquainted, and of which they had great need. Indeed, there is the positive, although indirect testimony of Josephus, who names *cats* among the animals which were eaten by the people of Jerusalem during the siege of that city by the Romans. The cat was one of the sacred animals of the Egyptians, more than equally with the dog. The natural death of one was an occasion of general mourning in the house in which it took place, and the killing of one was a capital crime, and sufficient, indeed, to produce a popular tumult. It seems, from the paintings, that when the Egyptian sportsmen went out in boats to take water-fowl, they were sometimes attended by a favourite cat, and from the readiness with which it is represented to have seized the game, the artist intended to show that those animals acted as retrievers, or were trained to catch the birds, being let out of the boat into the thickets which grew at the water's edge. Making every allowance for the great skill attributed to the Egyptians in taming and training animals, it is difficult, as Sir J. G. Wilkinson remarks, to believe that the cat could on any consideration be induced to take the water in quest of a fallen bird.<sup>a</sup>

At the present day, the cat is as much liked by the Moslems of Egypt and Syria as the dog is contemned. They are sensible indeed that the dog is capable of superior virtues and services; but the cleanliness, the delicacy, and the luxurious softness of the cat recommends it to higher favour and attention. There are cats in almost all houses: in the abodes of the rich they are much indulged: they are admitted to the best apartments, and partake in the indolent repose of their owners, who delight in stroking their soft down. In short, the cats are much more favourably treated than the mass of the race in this and other European countries; even the dogs are at peace with them, and boys do not molest them; one consequence of which is, that they are really more gentle and familiar than with us, and exhibit little of that suspicious and spiteful character which they bear in Europe.

It should be added, that in many towns there are large numbers of unowned cats, which at night prowl about over the house-tops, and descend from them into the areas of houses, and by day shelter in various obscure retreats. In towns where there are Franks who believe the plague to be contagious, such cats as make their appearance during the prevalence of the visitation are shot without mercy, as it is believed that by access from the house-tops, from which they cannot be excluded, they introduce the contagion in their fur. We do not know that these facts—even as to the existence of such semi-wild cats in oriental towns—have been noticed by any travellers. It should be stated however, that these are simply the refuse (for the kittens are not destroyed) of the house cat, abandoned to their own resources. For the support of these cats funds have sometimes (as in the case of street dogs) been bequeathed by charitable persons, in consequence of which large numbers are, in the large cities, daily fed in certain public places well known to the animals themselves.

The beautiful *Persian cat* is known in Syria, but only as a domestic rarity, and it can hardly be considered a native of the country. But there is a native breed between it and the common cat, which we only know through the mere mention of it by Dr. Russell.<sup>b</sup>

The *Water Rat*<sup>c</sup> is found throughout Syria, near the rivers, and inflicts its share of damage on the husbandman. But the most injurious to him of all the inhabiting muridæ, is the *Short-tailed Field Mouse*;<sup>d</sup> and this we may therefore conclude to be the animal whose devastations have often proved so ruinous in that country to the hopes of the husbandman. And this may also, we conclude, be considered the "mouse" whose injuries to the standing crops the prophets and other sacred writers commemorate. Such, probably were the *mice*, which, in conjunction with the locusts, destroyed in the beginning of the twelfth century all the crops for four successive years.<sup>e</sup> Burckhardt acquaints us that the province of Hamah (*Hamath*) is the granary of Northern Syria, though the harvest never yields more than ten for one, "chiefly

<sup>a</sup> Wilkinson, iii. 42.

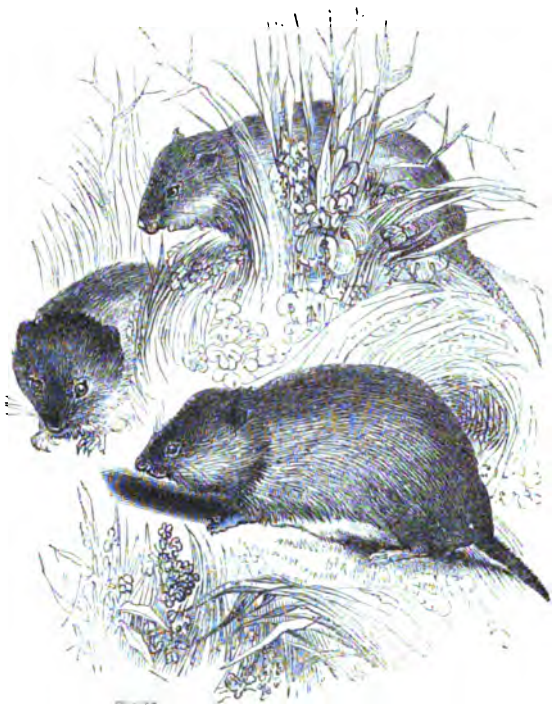
<sup>b</sup> Nat. Hist. of Aleppo, li. 180.

<sup>c</sup> *Mus amphibius*, Linn.

<sup>d</sup> Pennant's name: same as the *Mus terrestris* of Linnæus, the *Meadow-mouse* of Shaw.

<sup>e</sup> *Gesta Dei per Francos*, 823.

in consequence of the immense numbers of mice, which sometimes wholly destroy the crops." Afterwards he repeats the same statement with reference to the crops of the Haouran.<sup>a</sup> Unfortunately he did not see the animal, and we incline to think that *different* field-mice may be intended,<sup>b</sup> of which the one under notice is the most abundant and most destructive. However, the predominance in numbers and injuriousness ascribed in this article to the short-tailed field mouse, is by no means peculiar to Palestine. The notorious devastations in the young plantations of the Deane and New forests in 1812, 1813, were chiefly by this destructive arvicole, which was found to be fifty to one as compared to its long-tailed congener. In the former of these forests, 30,000 (of both species) were caught in the year ending March 1814, besides that a much larger number were taken from the pitfalls by various animals and birds.



[Short-tailed Field-Mouse.]

The *Dormouse*<sup>c</sup> has as good pretensions to be reckoned among the squirrels as among the mice; in habits it comes nearer



[The Dormouse.]

to the squirrel, although its dentition refers it to the mice. It sleeps during most of the day and hibernates in the winter; and although these are habits common to many other animals, it is from them that it obtains its popular designation. It feeds chiefly on fruits and nuts, and hence is in Syria more injurious to the gardens than to the fields. The same observation applies to the *Greater Dormouse*,<sup>d</sup> which exists in considerable numbers.

Those cosmopolites, the common *Rat* and *Mouse*, abound in Syria. Most of the houses are infested by them, and the natives, who seldom take the trouble of using traps,<sup>e</sup>

<sup>a</sup> Syria, 146, 277.

<sup>b</sup> The reason for this conclusion is, that in connection with the latter statement, Burckhardt gives *شفاق* *shafah*, as the native name of these mice: and this is a general name for all field-mice.

<sup>c</sup> *Mus acellanarius*, Linn., *Myosus acellanarius*.

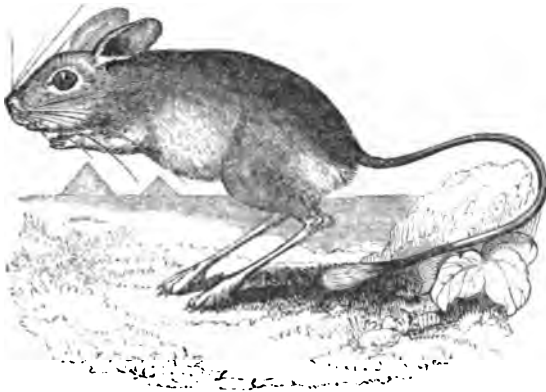
<sup>d</sup> *Mus Quercinus*, Linn.; *Lerot*, Buffon.

<sup>e</sup> The trap that is used is a heavy frame of wood, the base being a square trough containing the bait, over which is suspended (by a string connected with the bait) a heavy block of wood, which falls when the bait is attacked, and generally kills the animal on the spot; at least we never ourselves found one in the trap in the morning that was not dead and cold. They are often caught by the neck in attempting to spring out.

sometimes lay arsenic for their destruction ; but accidents having arisen from the water in which the poisoned animals have drunk, this dangerous method is seldom used in families where there are children. As already mentioned, few of the houses are unprovided with a cat, and mice are also destroyed by the house-serpents.

Returning to the *Field Mice*, it may be said that collectively they commit dreadful havoc in the cultivated fields in those years when there is little or no frost in winter. For this reason the Bedouins and peasants are encouraged to destroy them by a price upon the head of every one produced dead. It is remarkable that the *Jerboa* is very rarely found among the animals produced for this premium. Some have thought this the mouse (that is, the field-mouse) of the Scriptures. The greater numbers and more extensive ravages of the short-tailed field-mouse may render this doubtful ; and that it is not, as others think, the *shaphan* of the sacred books, we shall have another opportunity of showing.

The *Jerboa* of Palestine and Syria, and of the bordering deserts, is, we have no doubt, the



[Egyptian Jerboa.]

same species as in Egypt, of which we annex the figure of Hemprich and Ehrenburg. A very ample account of the animal is given by Sonnini,<sup>a</sup> to which we may refer those who desire full information. The jerboa possesses the longest hind-legs of any quadruped in existence, while the fore-legs are disproportionably short. They are miniature kangaroos, without the pouch. The fore-feet seem merely of use to rest upon the ground and to convey food to the mouth ; for if the animals are frightened, or wish to proceed at a quick rate, they stand upon their hind-legs only, and take

prodigious leaps, of four or five yards at a time, with tail horizontally extended. The tail is necessary to this mode of progression, and those who are deprived of it are unable to leap, or even to maintain themselves in the erect position which seems natural to the perfect animal. The jerboa feeds after the manner of a squirrel, by the aid of its fore-feet, which in fact serve the purpose of hands.

The animal is about the size of a large rat, although its long hind-legs and extended tail give it of course a much more conspicuous appearance. The body is short, well covered with long, soft, and silky hair, externally of a fawn colour, with blackish zig-zag stripes ; these tints being rather dusky, are set off by the fine shining white of the belly. The male is somewhat smaller than the female, and the tints of the hair less deep ; but the difference is inconsiderable. For other details respecting the figure and conformation of this remarkable animal we must refer to books of natural history.

The jerboas live in society, and in burrows which they make in the open plains with their teeth and nails. It is even said that they make their way through the soft stone they sometimes encounter under the soil. They are properly nocturnal animals, but are not uncommonly seen in the day-time near the openings of their burrows. They are exceedingly shy, and on the least noise, or the sight of any object they deem suspicious, retire hastily to their holes. They can only be killed by surprise. The Arabs contrive to take them by stopping up all the avenues to their burrows but one, by which they force them to come out. They are skinned, dressed, and eaten by that always hungry people, nor do the inhabitants of towns object to them. Sonnini *had heard* that the flesh was not very palatable ; and Russell *heard*

<sup>a</sup> Voyages, chap. xi.

that it was well tasted: neither took the trouble to ascertain. The skin is used as a common fur.

The *Jerboa* does not hibernate in the warm climate of Egypt. Sonnini suspected it must do so in more northern climes: this conjecture has been confirmed by Pallas; and, according to Russell, a partial hibernation takes place even in Northern Syria. His captured jerboas began to grow sleepy towards the approach of winter, and slept two or three days together without eating; they then had a waking interval of two or three days, and in the night were as lively as usual. In the depth of winter, they sometimes remained asleep for eight days together, without tasting food, and without apparent signs of life, their limbs being quite stiff, and their bodies cold to the touch. If brought near the fire in this state, they sometimes revived, and at others exhibited only slight signs of returning sensibility.

Sonnini fed his jerboas on wheat, rice, walnuts, and all kinds of fruit: Russell fed some of his for six months successively with dry biscuit, others with green lucern, or ripe fruit, and they thrived well on both. Those belonging to the latter observer were never known to drink, nor did they exhibit any inclination for water, when, for the sake of experiment, it was placed in their cage during the summer heats. They are thus qualified to inhabit deserts destitute of water. In a single night they will gnaw through thick boards of the hardest wood, which made it necessary that their cages should be wholly of metal, or the wooden parts covered with tin. Sonnini notices their mild and tranquil disposition: there were no quarrels among those that he kept, and they allowed themselves to be handled without repugnance; but he affirms that their gentleness was neither amiable nor interesting, and appeared to be the effect of cold and complete indifference bordering on stupidity, unaccompanied as it was by any testimonials of joy, fear, or gratitude.

The burrows of the jerboas are of frequent occurrence in the plains and deserts, and various travellers complain of the inconvenience of the numerous holes to their cattle. This, however, less frequently occurs in Palestine than in the bordering deserts. In particular, almost every traveller across the desert from Damascus to Palmyra—from the first discoverers of the ruins<sup>a</sup> down to Addison—take notice of these burrows. The last-named traveller described the soil of the vast plain upon which the traveller enters after quitting the last inhabited village as every where burrowed by the jerboa, in some parts completely honey-combed, which renders riding dangerous, as the ground gives way under the feet of the dromedaries. He says that some of the animals were so tame as to sit up in their holes, and watch the party as it passed. It was October, and he adds, “how the little animals exist at this season of the year appears to me passing strange, as the herbage is all burnt up, and there is no water.” As to water, we have seen that they do not need that, and we presume that at the season indicated they live upon the roots of plants.<sup>b</sup>

The *Hamster* is common enough in Syria, although far less so than the field-mouse. It is very injurious in the gardens. Dr. Russell on dissecting one, found the pouch on each side stuffed with young French beans, arranged lengthways so exactly and close to each other that it appeared strange by what mechanism it had been effected; for the membrane which forms the pouch, although muscular, is extremely thin, and the most expert fingers could not have packed them in more regular order. When they were laid loosely on the table



[Hamster.]

<sup>a</sup> See Philos. Transacts., xix. 131.

<sup>b</sup> The above notice of the jerboa is drawn chiefly from Sonnini and Russell, as before cited, with further matter from various travellers.



they formed a heap three times the size of the animal's body. From this some idea of their ravages may be formed. Although in this instance beans formed its plunder, the animal is equally destructive to corn, of which, as well as of grain, it forms a yearly store in its burrow. As much as two bushels of good cleaned grain may commonly be found in each magazine. The animal is fierce and fearless, unless before the pole-cat, which is its greatest enemy.

The common *Porcupine*<sup>a</sup> exists in Syria and Palestine, although it does not appear to be very



[Porcupine.]

common. Specimens are sometimes caught and brought to the towns by the peasants, and are usually retained as curiosities in the kitchen. The inhabitants entertain the popular belief, now known to be erroneous, of the porcupine's power of ejaculating its quills with force against an enemy; although, of course, no one can be found who has seen it. No mention of this animal can be detected in the Scriptures. It is often represented in the Egyptian sculptures, from which it appears to have been sought after as game.<sup>b</sup> The captured animals were brought home alive: their ultimate destiny is not known—perhaps for the table, for the flesh of this animal is not unpalatable: it is eaten in Italy,

and sold in the markets of Rome and other places. The porcupine is not *now* found in Egypt.

*Hares* are rather common in Syria. Russell says that there are two sorts, differing considerably in point of size. "The largest is the Turkman hare, and chiefly haunts the plains; the other is the common hare of the desert; both are abundant." Which of these is distinctively the Syrian hare, as figured in the following cut, we do not well know, but believe it is the latter. It will be seen that it somewhat differs from our common species in its head and tail. Its colour also is lighter, according to a just observation of Sonnini, that the colour of the hair changes and grows darker in proportion as the climate becomes less sultry. In Africa their fur is nearly grey, lighter at the Cape Verd than in Egypt, where, however, they have no shade of that fawn or rufous colour, which gives the hares of Greece a nearer resemblance to those of northern countries. Sir. J. G. Wilkinson states that the hares of Egypt have longer ears than our own, and that they are of smaller size. The first is a circumstance which we fail to detect in the Syrian example; but it is exhibited by the Egyptian artists, as shown in the cuts at pp. ccclx, ccclxi. The hare is not now hunted as by the ancient Egyptians—perhaps because it is to the Moslems as to the Jews, an interdicted article of food. This is no great loss to the natives, as the hare in Egypt, Syria, and other warm climates is far from being as good eating as ours. Like the flesh of many other animals in southern countries, that of the hare is less firm and savoury than in Northern Europe; it is also less highly coloured, and, like almost every species of game in warm climates, wants that peculiar flavour which is its principal recommendation. Perhaps it is from this difference in the flesh of the hare that it has been considered unwholesome, and its use forbidden in the East. It should be remarked, however, that the Arabs, Kourds, Turkmans, and other nomades or semi-nomades, eat with very little scruple such hares as fall into their hands.

<sup>a</sup> *Hystrix cristata*.

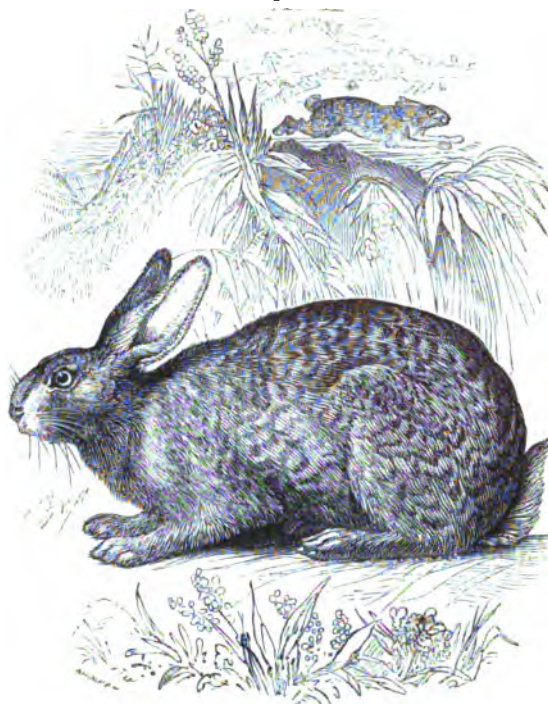
<sup>b</sup> See, for instance, the cuts at pp. ccclx, ccclxi.

Europeans in the East hunt the hare, although the natives do not. They do not hunt it after the European fashion, on account of the comparative inefficiency of the dogs; but adopt the method in which the Orientals themselves hunt many animals—that is, with the assistance of the hawk. Of this hunt Russell gives the description, which will be found in the note below.<sup>a</sup> The Arabs, in their deserts, chase them on foot, and throwing their short sticks at them with great precision, sometimes knock them down.<sup>b</sup>

We learn from the same author that the hares in Syria are exceedingly apt, when hard run, to take refuge in holes of the earth, or of rocks, which is very uncommon in our climate. When they do this, they are usually suffered to escape, but sometimes endeavours are made, with success, to drag them forth. It is not supposed that the hares burrow, or that these holes were made by them, but only that they screen them occasionally as places of refuge. Hares are only mentioned in Scripture as an example of the operation of the rule which excluded particular classes of animals from being used by the Israelites as food.<sup>c</sup>

We do not find that any traveller notices *Rabbits* in Palestine. They may exist; but, if so, they are very rare. Russell describes them as scarce in the vicinity of Aleppo. Some are there bred in the houses for the use of the Franks; but the Turks seldom or never eat them, and the Jews hold them to be, like the hare, one of the animals forbidden by Moses. In fact the rule which excludes the hare certainly excludes the rabbit also. The fur of the white rabbit is still used at Aleppo; but that of the black, of which the best were in Russell's time imported from England, bears a double price, and is in great request among people of the law.

The *Coney* of our public version of the Scriptures, and the *צב, shaphan*, of the original, has been conceived by Bochart and others to be the *Jerboa*. Shaw was rather disposed to



[Syrian Hare—*Lepus Syriacus*.]

<sup>a</sup> "The company, consisting of twenty or thirty horsemen, servants included, draw up in a line at the distance of six or eight feet. Near each end of the line, which is termed the *Barabar*, two brace of greyhounds are led by footmen, and advanced a little before the centre: the falconer rides. It should be remarked that the dog leaders are surprisingly adroit in finding a hare, and are encouraged by a reward if they give proper notice, which is done by calling out deliberately, "Ya'oo!" ("She sleeps!") In this order the *Barabar* marches slowly, and as soon as the hare is put up, one, or a brace, of the nearest hounds are slipped, and the falconer, galloping after them, throws off his hawk. Such of the company as choose follow, the others remain standing in the *Barabar*, to which the sportsmen return when the chase is over. The hare cannot run long where the hawk behaves properly, but sometimes, getting the start of the dogs, he gains the next hill and escapes. It now and then happens, when the hawk is fierce and voracious in an unusual degree, that the hare is struck dead at the first stroke: but that is very uncommon; for the hawks preferred for hare-hunting are taught to pounce and buffet the game, not to seize it: they rise a little between each attack, to descend again with fresh force. In this manner the game is confused and retarded till the greyhounds come in."

The same writer gives the following account of the mode in which the hare is dressed by the Arabs:—

"A hole dug in the ground is furnished with such dry brushwood as the desert affords, and upon this, when thoroughly kindled, the hare is laid without any preparation, or even removing the flue or entrails. When the fire has ceased blazing, the earth that had been dug out and laid round the edges, being now thoroughly heated, is raked over the hare, which is thus left covered up until sufficiently roasted. Its own gravy with a little salt composes the sauce, and the dish is said by those who have eaten it to be excellent."

<sup>b</sup> Skinner, ii. 65.

<sup>c</sup> Lev. xi. 6. Deut. xiv. 7.

ascribe the name to an animal called the *wabber*, and this conclusion has since been taken up by Bruce and others, and supported by evidence not easily shaken. The Scripture notices indicate that the shaphan chews the cud;<sup>a</sup> that it dwells among mountains and rocks;<sup>b</sup> that it is gregarious, gentle, and sagacious;<sup>c</sup> all which agrees with the *wabber*, but not with the *jerboa*, and still less with the rabbit.

The *wabber* is frequent in Arabia Petræa and Sinai, and is found in Palestine. Laborde has a figure of it; but by some strange oversight it is described under the name of a gazelle. Correcting this mistake, his account will stand as follows:—

“Hussein and Bicharie, two of our guides, set out upon an excursion, their guns on their shoulders, saying ‘that they would go hunt the *wabber*,’ an animal commonly met with in this part of the mountain. Ascending the valley they proceeded to the right, and in the course of a few hours they returned, bringing with them something wrapped up in their cloaks. We saw by the glee displayed in their faces that they had not been unlucky. They immediately produced four *wabbers* which they had found in their lair, being the whole family—the father and mother, and two little creatures a fortnight old. These creatures, who are very lively in their movements, endeavoured to bite when they were caught. Their hair is a brown yellow, which becomes pale as long as the animals grow old. In appearance, on account of the great vivacity of their eyes, the head being close to the shoulders, and the buttocks being drawn in, and without a tail, they resemble a guinea-pig. Their legs are all of the same height, but the form of their feet is peculiar; instead of nails or claws they have three toes in front and four behind, and they walk like rabbits on the whole length of the foot. The Arabs call it *El Wabber*, and know no other name for it. It is common in this part of the country, [about the head of the *Élanitic Gulf*], and lives upon the scanty herbage with which the rain in the neighbourhood of springs supplies it. It does not burrow in the earth, its feet not being calculated for that purpose; but it conceals itself in the natural holes, or clefts, which it finds in the rocks.”

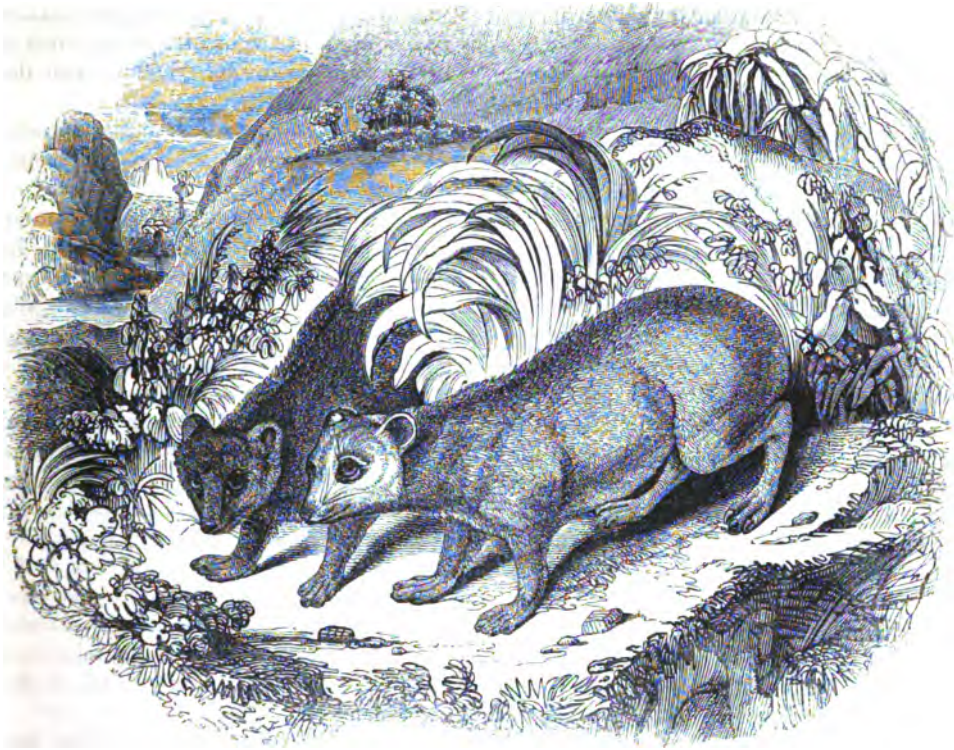
Bruce, whose character as a traveller and a naturalist rises with the lapse of time, also noticed the animal in the Sinai Peninsula. He had previously become acquainted with it in Ethiopia, and, as an Ethiopian animal, describes it under the name of *Ashkoko*. He also notices its abundance in the Lebanon mountains, and says the species seemed to him alike in all these places, unless that those of Ethiopia were superior in size and fatness. Accordingly, the name of *Hyrax Syriacus* has been given to the species inhabiting those quarters. That of the Cape of Good Hope has been erected into a separate species [*Hyrax Capensis*], and Col. Hamilton Smith has formed another South African species under the name of *Hyrax arboreus*, from its inhabiting the hollows of decayed trees. But the differences between these three species is exceedingly small. The Syrian Hyrax is brownish grey above, has the lower parts white—a yellowish tint intervening between the two colours; the head and feet are more grey than the body. The animal is about a foot long, by eleven inches high. Bruce describes it as a gregarious animal, and says that frequently several dozens of them may be seen sitting on the great stones at the mouths of caves, warming themselves in the sun, and coming out to enjoy the freshness of a summer evening. They do not stand upright upon their feet, but seem to steal along as in fear, their belly being nearly close to the ground, advancing a few steps at a time, and then pausing. “They have something,” he adds, “very mild, feeble-like and timid in their deportment, are gentle, and easily tamed, although when roughly handled at first, they bite very severely.” Bruce further informs us that the name of *Ashkoko*, which the animal bears in Amhara, is probably derived from the singularity of the long herinaceous hairs, which, like small thorns, grow about the back, and which in Amhara are called *Ashkok*.

Jerome appears to have had this animal in view when he describes the Hebrew *shaphan* as an animal not larger than a hedgehog, resembling a mouse and a bear [the latter perhaps from the form of its feet], whence in Palestine it was called *αρκτομυς* (*arctomys*), the “bear-mouse.” He adds that they were very numerous in these countries, and that they dwell in caverns of the

<sup>a</sup> Lev. xi. 5.

<sup>b</sup> Psalm civ. 18.

<sup>c</sup> Prov. xxx. 26.

[The Wabber—*Hyrax Syriacus*.]

rock and caves of the earth. The ancient translators of the Scripture seem, from their variance, to have been uncertain with respect to the *shaphan*. All the alternatives may be seen in Bochart, who, in a long dissertation, adduces various passages from Arabian authors relating to this animal, and seems to have collected from them that it was a sort of Field-Rat. In modern times, Dr. Shaw notices the Hyrax under (as he says) the native name of *Daman Israel*, and mentions it as an animal of Lebanon, but common in other parts of Palestine. The name appears to have been mistaken—the real one being *Ganam Israel*, or, “Israel’s lamb,”—the reason of which name it is difficult to conjecture, unless from its abundance among the rocks of that stony wilderness in which the Israelites wandered for forty years. Shaw also cites Prosper Alpinus, who had before spoken of this animal, describing it as “a small creature not unlike a rabbit, which they call ‘the lamb of the Children of Israel.’” Shaw declared his belief in the preferable claims of the “*daman*” to the jerboa, whose claims Bochart had advocated. This opinion, together with the (wrong) name was adopted and made popular by Buffon; and with the support it subsequently received from Bruce, has become a very general conclusion, which we have not ourselves the least inclination to dispute.

It happens that this small animal, which has thus been made of considerable interest to the Biblical student, is also of uncommon interest to the zoologist, from the peculiarity of its organization. A cursory view of its external form would seem to suggest their relationship to the *Rodentia*, among which they have accordingly been classed. But Cuvier found in this small creature a powerful example of the necessity of depending upon anatomy rather than upon the relations of external form, for determining the true position of animals; for by means of anatomy he had obtained abundant evidence that the true place of this animal was in what, with mere reference to external form might seem the astonishing and anomalous position, among the *Pachydermata*, between the tapir and the rhinoceros.

*Hogs* in a tame state are not kept in Palestine, unless a few by foreigners. This is because the Moslems abstain from and abominate pork as an article of food to the full as much as the Jews do or ever did. There does not appear any reason in the Law of Moses why the hog should be held in such peculiar abomination. There seems nothing to have prevented the Jews, if they had been so inclined, to rear pigs for sale, or for the use of the lard. In the Talmud there are some indications that this was actually done; and it was probably for such purpose that the herds of swine mentioned in the New Testament were kept, although it is usual to consider that they were kept by the foreign settlers in the land. Indeed, the story which accounts for the peculiar aversion of the Hebrews to the hog, and which will be duly noticed in the historical portion of this work, *assumes* that it did not originate until about 130 years before Christ, and that previously some Jews were in the habit of rearing hogs for the purposes indicated. Pork is said to have been also interdicted to the ancient Egyptians; and yet paintings exhibit herds of those animals under the care of a swine-herd.

*Wild boars* are mentioned several times in the Scripture, and they are still found in Palestine and the neighbouring countries—chiefly in the hills, from which they descend occasionally into the valleys and plains and sometimes approach very near to the towns, the gardens which surround the towns being a great attraction to them. They abound in Mount Tabor. In places where there are European settlers the wild hogs are shot by the peasants, who lie in wait for them near the fountain, or the streams to which they come at night to drink, and placing the carcasses on asses, carry them to the town for sale to the Franks. They are generally bought whole by one person, who distributes it among his friends. A hog, dead or alive (for we have known young hogs taken and brought for sale alive), is commonly taken for sale to the Consul; but in some places where Franks are numerous in the town, and the hogs too numerous without for the carcasses to be always purchased by the same persons, they are often publicly exposed for sale. Dr. Russell tells us that this was the case in Aleppo in his time. The wild hog is said to feed chiefly on liquorice root, which grows in abundance in many of the eastward plains, and in the proper season, that is in the autumn and beginning of winter, the flesh is delicious, very fat, and easily digestible. Prosper Alpinus affirms the flesh of the hog in Egypt, also, is more light and delicious than in Europe. The same writer remarks that in Egypt most of the Moslems kept young swine in their stables from a notion that their presence was of service to the horses, and that, as they did not eat the flesh, they were at all times glad to exchange a hog of a year old for a young pig. The English reader notes with some surprise that the wild boar is described in the Psalms (lxxx. 13) as injurious to the vines. That it is so, is but too well known in the East.<sup>a</sup>

*The Horse.* Some points in the Scriptural history connected with the horse have been noticed in the other portion of the present work. As it may be of use, we have however produced in a note<sup>b</sup> (taken chiefly from Jahn) the substance of all our Scriptural information on the subject.

<sup>a</sup> The Rev. J. Hartley relates an anecdote in point. His friend, the Rev. Mr. Leevs, was proceeding in the dusk of the evening from Constantinople to Therapia. Passing a vineyard, he observed an animal of large size rushing forth from among the vines, crossing the road, and taking to flight with great precipitation. "The Greek syrogee, who was riding first, exclaimed 'Γαυρόν, Γαυρόν,'—'Wild boar! Wild boar!'—and really it proved a wild boar, who was retreating from the vineyards to the wood. 'What has the wild boar to do in the vineyard?' inquired Mr. Leevs. 'Oh!' said the syrogee, 'tis the custom of wild boars to frequent the vineyards, and to devour the grapes.' And it is astonishing what havoc a wild boar is capable of effecting during a single night. What with eating, and what with trampling under foot, he will destroy a vast quantity of grapes."—Hartley's 'Researches in Greece,' 234.

<sup>b</sup> The nomades of recent ages value this animal much more than those of an earlier period did. It is very late before the presence of the horse among the Bedouins is indicated; but we find them early and constantly among the Egyptians (Gen. xlvii. 17; xlix. 17; Exod. ix. 3; xiv. 6—28; Job xxxix. 19). That country was always celebrated for those animals [1 Kings x. 28; Isa. xxxi. 1; xxxvi. 9; Ezek. xvii. 5]. Joshua encountered chariots and horses in the north of Palestine—but was directed to render the horses he captured useless, by cutting their hamstrings: for while they could be of little comparative advantage in the mountains of Palestine, the pride and confidence connected with the early use of the horse was unobnoxious to the first principles of the theocratic institution [Josh. xi. 4—9; comp. Judg. iv. 15; v. 22, 28]. A short time afterwards the Philistines conducted chariots in battle [Judg. i. 19; 1 Sam. xiii. 5]. Anciently horses were exclusively used for the purposes of war [Prov. xxi. 31]. Hence they are opposed to asses, which were used in times of peace [Zech. ix. 9]. The Hebrews first paid attention to the breeding of horses in the time of Solomon. The hundred which were reserved [2 Sam. viii. 4; 1 Chron. xviii. 4] were destined for the use of David himself, whose example was imitated by Absalom [2 Sam. xv. 1]. The Psalmist frequently alludes to the mode of governing horses, and to equestrian armies [Psalm xxxii. 9; xxxiii. 17; lxxi. 12; lxxvi. 6; cxlvii. 10]. Solomon carried on a

Captain Frankland<sup>a</sup> states that the horse of Syria is generally about fifteen hands high, strong and active, mostly of Syrian dams by Arabian sires; the price varying from 400 to 1000 piastres. "They are hardy, well tempered, and sure footed, have seldom any disorder, and live to a great age. They become exceedingly attached to the groom, and will follow him as a dog follows his master." Burckhardt informs us that there are three breeds of horses in Syria:—the true Arab breed, the Turkman, and the Kourdy; which last is a mixture of the two former.

The Turkman horses being of a larger size, or stronger make, and more martial appearance, and when dressed, displaying the Turkish trappings to more advantage, are preferred by the Osmanlis to the Arab horses. They are taught to walk gracefully in a crowd, to set off at once full speed, to turn on either hand at the gentlest touch from the rider, and to stop short instantly when he pleases. But the horses in Syria are not in general so well broke in the menage, or have such splendid action as those of Cairo.

The Arabian horses are of more slender make, and—it may startle some to learn—in appearance less showy; but they are beautifully limbed, more hardy, and reckoned much fleet. The esteem they are held in by the Arabs themselves, the scrupulous care taken to preserve the purity of the breeds, and the reluctance with which the Arabs consent to part with their mares,<sup>b</sup> are circumstances often mentioned by travellers.

This singular attention to the breed of the horses still subsists in some parts of Arabia; but in the confines of the desert, where the Europeans are settled, the spirit of avarice predominates, and the native integrity of an Arab, unable to resist temptation, is transformed into the low cunning of a jockey.<sup>c</sup> In general, the Arabs will not part with their *best horses*—these are

great trade in Egyptian horses [1 Kings x. 28; 2 Chron. i. 16, 17]. A horse was estimated at about one hundred and fifty, and a chariot at six hundred shekels. In the time of Ezekiel the Tyrians purchased horses in Togarmah or Armenia [Ezek. xxvii. 14]. The Hebrews after the time of Solomon were never destitute of chariots and cavalry. The rider used neither stirrup nor saddle, but sat upon a piece of cloth thrown over the back of the horse. The women rarely rode horses; but whenever they did, they rode in the same manner as the men. Horses were not shod with iron before the ninth century; hence solid hoofs were esteemed of great consequence [Amos vi. 12; Isa. v. 28]. The *bridle* and the *carb* were used for horses and mules [Psalm xxxiii. 9].

<sup>a</sup> "Travels to and from Constantinople," ii. 167.

<sup>b</sup> We cannot resist introducing the following passage from the Rev. V. Monro's 'Summer Ramble in Syria.' On the visit to the river Jordan one of the Arab escort, "a great ruffian, was mounted on a white mare of great beauty. Her large fiery eye gleamed from the edge of an open forehead, and her exquisite little head was finished with a pouting lip, and expanded nostril. Her ribs, thighs, and shoulders were models of *make*, with more bone than commonly belongs to the Syrian Arab; and her stately step received additional dignity from that aristocratic *set on* and carriage of the tail which is the infallible indication of good family..... Having inquired her price, I offered the sum, whereupon the dragoon asked one-third more. After much bating and debating I acceded, and he immediately stepped back in the same proportion as before. This is invariably the practice with the Arabs. It has happened to me repeatedly in hiring horses, that if the terms have been agreed upon without two days being occupied in the treaty, they imagine more might have been obtained, fly from the bargain, and increase their demand. I therefore discontinued my attempts to deal. The Arab said he loved his mare better than his own life; that money was of no use to him, but that when mounted upon her he felt rich as a paasha. Shoes and stockings he had none, and the net value of his dress and accoutrements might be calculated at something under seventeen pence sterling."

D'Arvieux has an interesting chapter upon Arabian horses, in the course of which he mentions that there are partnerships in valuable mares. "A Marseilles merchant," he goes on to say, "was thus partner in a mare with an Arab whose name was Ibrahim Abou Vouasses. This mare, whose name was Touyasse, besides her beauty, her youth, and her price of twelve hundred crowns, was of the first noble race. That merchant had her whole genealogy, with her descent both on the sire and mother's side back for five hundred years, all from public records. Ibrahim made frequent journeys to Rama to inquire news of that mare, which he loved extremely. I have many a time had the pleasure to see him cry with tenderness, while he was kissing and caressing her: he would embrace her, would wipe her eyes with his handkerchief, would rub her with his shirt-sleeves, and would give her a thousand blessings during whole hours that he would be talking to her:—'My eyes!' would he say to her, 'my soul! my heart! Must I be so unfortunate as to have thee sold to so many masters, and not be able to keep thee myself? I am poor, my gazelle! You know well enough, my sweet, that I have brought thee up like my child. I never beat thee, never chid thee: but did cherish thee as the apple of mine eye. God preserve thee, my dearest! Thou art beautiful! thou art sweet! thou art lovely! God defend thee from the evil eye!' And so he would go on saying a thousand things like these. He then embraced her, kissed her eyes, and went backwards bidding her the most tender adieus."

D'Arvieux adds, that this reminds him of an Arab of Tunis, who would not deliver up a mare which had been bought for the stud of the king of France. "When he had put the money in his bag, he looked wistfully upon his mare, and began to weep. 'Shall it be possible,' said he, 'that after having bred thee up in my house with so much care, and after having had so much service from thee, I should be delivering thee up in slavery to the Franks for thy reward? No! I never will do it, my darling! And with that he threw down the money upon the table, embraced and kissed his mare, and took her home with him again.'"

<sup>c</sup> And so with the Turks, among whom, Capt. Frankland attests, a good deal of jockeyship and duplicity will be found, not unworthy of Newmarket or Epsom, displayed upon occasion of the purchase or sale of horses. They frequently procure a number of their friends, to come, as by accident, and puff off the horse in question, bidding against the traveller, and showing a great apparent anxiety to purchase themselves. In these cases, the only plan is to get backed likewise by another party, who decry the animal, and affect to find *unfavourable marks* about him. The Turks and Arabs are so superstitious in these matters, that they will not trust themselves upon a horse which has a *bad mark* about him:—this being sure to portend some evil to the

too precious to be sold—but, trading upon the reputation of their animals, they will endeavour to put off a most inferior horse with the most solemn and formal assurances of its being of the best breed in Arabia. In the interior of Arabia, as noticed by Niebuhr, the natives, who on other occasions care little about taking a false oath, are never known to sign a false declaration as to the genealogy of a horse. But on the borders of Arabia, as in Syria, the Arabs, corrupted by intercourse with strangers,<sup>a</sup> have very slight scruples on the subject, and the *teskar*, or formal attestation of the genealogy, is often attested by persons who know nothing of the matter beyond what they had been instructed to swear.

The Arabs greatly prefer to ride mares rather than horses, the greater proportion of which they sell to the townspeople; and, as it happens that the Turks prefer horses, this differing taste acts exceedingly well. The price of an Arab horse in Syria was, in Burckhardt's time, [1810-1816] from 10*l.* to 120*l.*; the latter price being the highest known. An Arab mare can scarcely be obtained under 60*l.*; and even at that price it is difficult for the townspeople to purchase one. Prices have risen considerably since the English have been in the habit of purchasing Arabian horses at Baghdad and Basra to send to India. The Arabs themselves often pay as much as 200*l.* for a celebrated mare—and even such a price as 500*l.* has been given—a prodigious sum, considering the scarcity and consequent high value of money in Western Asia. Burckhardt mentions a sheikh who had a famous mare, for the half<sup>b</sup> of which he gave 400*l.*

The Arab horses are mostly small, in height seldom exceeding fourteen hands; but few are ill formed, and they have all certain characteristic beauties which distinguish their breed from any other. The Arabs count five noble breeds, descended, as they believe, from the five favourite mares of Mohammed. But these five principal races diverge into infinite ramifications; for any mare particularly swift and handsome may give origin to a new breed, the descendants of which are called after her. On the birth of a colt of noble breed, it is usual to assemble some witnesses, and to write an account of the colt's distinctive marks, with the name of its sire and dam. These genealogical tables never ascend to the grand-dam, because it is presumed that every Arab of the tribe knows by tradition the purity of the whole breed. Nor is it always necessary to have such certificates; for many horses and mares are of such illustrious descent that thousands might attest the purity of their blood. The pedigree is often put into a small piece of leather covered with a waxed cloth, and hung by a leathern thong around the horse's neck.

The Arabs keep their horses in the open air all the year round, not (like the Turkmans) tying them up in the tent, even in the rainy season. Although thus exposed to the inclemency of the weather at all seasons, and with very little attention paid to its health, the Arab horse is seldom ill. From the time that a colt is first mounted (which is after its second year) the saddle is scarcely ever off its back: in winter a sackcloth is thrown over the saddle, but in summer the horse stands exposed to the mid-day sun. Those Arabs who have no saddles ride upon a stuffed sheep-skin, and without stirrups: they all ride without bridles, guiding

rider. The traveller may thus get a horse cheap. . . . The kings of France and Bavaria [this was in 1827] sent experienced horse-dealers into Syria, to purchase Arab stallions for the European haras. The captain never met with these agents, but was told by good judges, who have seen much of them and their cattle, that they had in general been much taken in. Indeed, good horses upon the coast are very difficult to be had. The plains of the Haouran afford the best market; but they are distant, and not much visited by European merchants.

<sup>a</sup> We do not wish this to be drawn into an expression of opinion as to the relative deservings of the Arabs and Syrians. Two foreign nations may be corrupted by intercourse with each other, although one of them may not originally have been worse than the other. In such cases one party knows many things which the other does not, and there is a mutual temptation in each party to take advantage of the other's ignorance. Hence the intense improbability which is usually found to exist on the borders of neighbouring nations.

<sup>b</sup> This phraseology needs explanation. A mare of high breed is seldom sold without the seller reserving the half or two-thirds of her. If he sells half, the buyer takes the mare, and is obliged to let the seller take the mare's next filly, or to keep the filly himself and return the mare. If the Arab has sold but one-third of the mare, the purchaser takes her home, but must give the seller the fillies of two years, or else one of them and the mare. The fillies of the third year, and all subsequent, belong to the buyer, as well as all the male colts, whether produced the first or any following year. It thus happens that most of the Arab mares are the joint property of two or three persons, or even of half-a-dozen, if the price of the mare be very high. A mare is sometimes sold on the remarkable condition that all the booty obtained by the man who rides her shall be shared between him and the seller.

the horse with a halter. In fact, the extreme good temper and entire freedom from vice of a horse which is treated, and which feels itself rather the friend than the slave of man, renders a bridle needless. The Arab is ignorant of the frauds of the European jockey, and although in their dealings with strangers they are apt to play false as to the pedigree, they may generally be trusted as to the actual qualities of the horse they sell. Few of them know how to tell the age of a horse by examining its teeth. Burckhardt relates that when he once looked into the mouth of a mare, it was at first apprehended by the Arabs present that he was practising some secret charm; and when the owner heard that by such inspection the age of the animal might be ascertained, he seemed astonished, and wished that his own age should be told by the examination of his teeth.

The Arabs believe that some horses are predestined to evil accidents; and, like the Osmanlis, they think that the owners of other horses must sooner or later experience certain misfortunes, which are indicated by particular marks on the horses' bodies. There are above twenty evil marks of this kind, which have the effect of depreciating the value of the horse by two-thirds, or more.

In Syria, as elsewhere in Western Asia, the horses universally live on barley and chopped straw. They are regularly fed morning and evening, and for the most part eat nothing in the interim. In the stable the provender is laid before them in troughs; in the fields it is put into hair bags, which are fastened in such a manner to the horse's head that he can feed as he stands. In the spring season the horses are fed for forty or fifty days with green barley, cut as soon as the corn begins to ear. This is termed "tying down to grass," during which time the animals remain constantly exposed in the open air, and for the first eight or ten days are neither curried, mounted, nor even led about. After this they are dressed as usual, and rode out gently, but are never much worked in the grass season. Some feed their horses with the cut-down corn in their stable yards; but it is considered better to tie them down in the barley field, where they are confined to a certain circuit by a long tether. This grazing is considered of great service to the health of the horses, and gives a beautiful gloss to their skin. They are at all times littered with the refuse of their provender, mixed with their own dung dried in the sun.

The reader will perceive that there is some difference between this treatment and that which the Arab horses receive. Some Arabian tribes, indeed, give no corn at all to their horses, which feed upon the herbs of the desert, and drink plenty of camel's milk, and are besides nourished with a paste made of dates and water. Even flesh, raw as well as boiled, is given to the horses in some quarters, together with the fragments of their owners' meals. An inhabitant of Hamah assured Burckhardt that he had often given his horses roasted meat before the commencement of a fatiguing journey, that they might be the better able to endure it; and the same person, fearing lest the governor should take from him his favourite horse, fed him for a fortnight exclusively upon roasted pork, which so excited its spirit and mettle, that it became absolutely unmanageable, and no longer an object of desire to the governor.

Another difference is, that the Arabs never clean or rub their horses, whereas in Syria the better sort of horses are dressed every morning.

These details respecting Arab horses are by no means irrelevant; for not only do such horses abound in Syria and in Palestine particularly, but Burckhardt affirms that it has come to his knowledge, on the very best authority, that the finest race of Arabian blood-horses is to be found in Syria; and that of all the Syrian districts, the most excellent in this respect is the Haouran (beyond Jordan), where the horses may be purchased at first cost, and chosen among the camps of the Arabs themselves, who occupy the plain in spring-time. The same excellent traveller informs us that the Bedouins are of opinion that the product of an Egyptian mare by a blood Arabian produces a good breed, much better than that of the indigenous Syrian mares, whose breed is not considered of any value, even though crossed by the Koheyl.

Burckhardt contradicts the general opinion that Arabia is very rich in horses. He is confident that he is not by any means under the true estimate when he calculates the number of horses in Arabia, as bounded by Syria and the Euphrates, at fifty thousand—a number much



inferior to what the same extent of ground would furnish in any other part of Asia or in Europe.

It has been already stated that the Osmanlis, contrarily to the Arabs, prefer horses to mares for riding. Entire horses are usually preferred; but persons advanced in years, especially among the Effendis, like geldings, which are not uncommon in the towns. The Syrian horses, *in common with other domestic animals of that climate*, partake of a certain gentleness of temper, and have such a disposition to become docile and familiar, that it is very rare indeed to find one completely vicious.<sup>a</sup> The Arab horses are remarkably distinguished for this quality, owing, without doubt, in a great measure to the kind and humane manner in which they are reared, and ever after treated by their masters.<sup>b</sup>

*The Ass.* It appears from various evidence, and in particular from the negative evidence of Scripture, that the ass was reduced under obedience to man long before the horse. In the preceding notice of the horse it has been shown that the horse was not known in Palestine until a comparatively late date; and although it was in use earlier in Egypt, it does not appear that even there the horse was domesticated in the time of Abraham. The negative proof is, that the patriarch on leaving that country received from its king valuable gifts, including, as it appears, all the animals then domesticated, "sheep and oxen, and maid-servants, and *he asses*, and *she-asses*, and camels." Now that the horse is not included seems clearly to evince that it was not domesticated, for it is incredible that *if* possessed by the Egyptians it should not have been included among the riches which Pharaoh showered upon Abraham. The absence of the horse, and afterwards its use exclusively in war, while the ass was the beast of civil life, occasioned the latter to be treated with such care, as to breed and rearing, that it had, and still has in the East, a very different appearance and character to that which it bears with us. Climate, also, may have something to do with the difference, as it appears that the ass is constitutionally the animal of a warm climate. In the genial climates of Western and Central Asia, where the ass is carefully trained, and deemed no unworthy rival of the horse, the asses are not only diligent and patient, but active, beautiful in appearance, and in no wise ignoble. And if the ass is even now held in high estimation, overshadowed as he is by his magnificent congener, the horse, how much more so when the horse was not in use, or used only in war? Anciently, princes and great men rode on asses,<sup>c</sup> and we have ourselves seen asses on which princes and great men might not disdain to ride. There are still, as formerly, an unusual number of *white asses*; <sup>d</sup> and we presume that it is the fact that such asses, as well as horses of the same colour, have their manes and tails stained, and figures marked on their bodies with an ochreous-red colour, which has led some writers to speak of parti-coloured asses. The asses used in riding among the Hebrews were, as now, guided by a rein placed in the mouth; in Hebrew *חבש המור*, translated to "saddle the ass."<sup>e</sup> The saddle was merely a piece of cloth, thrown over the back of the animal. Among the wealthy, especially when women rode, a slave followed with a staff, which he used occasionally, in order to quicken the animal's speed.<sup>f</sup>

The best asses, as of horses, are those of Arabian blood. Chardin describes them as "perhaps the finest asses in the world: their coat is smooth and clean; they carry the head elevated, and have fine and well-formed legs, which they throw out gracefully in walking or galloping. They are used only for the saddle, and are imported in vast numbers into Persia [and Syria], where they are frequently sold for four hundred livres; and being taught a kind of easy ambling pace, are richly caparisoned, and used only by the rich and luxurious nobles."<sup>g</sup> As the best of the Arabian horses, so may the best of these Arabian asses be found in Syria and Palestine.

<sup>a</sup> A vicious horse, prone to bite, is generally cured by a hot leg of mutton being presented to him, the painful effects which follow his vicious bite at which make a deep impression on his memory.

<sup>b</sup> The above notice of horses is chiefly drawn up from the accounts of D'Arvieux, Russell, and Burckhardt, with incidental details from various other sources.

<sup>c</sup> Gen. xxii. 3, 5; Num. xxii. 21, 30; Josh. xv. 18; Judg. i. 14; v. 10; x. 4; xii. 14; 1 Sam. xxv. 20, 23; 2 Sam. xvii. 23; xix. 26; 1 Kings ii. 40; xiii. 13; 2 Kings iv. 22, 24; Zech. ix. 9; Matt. xxi. 1—7; Luke xix. 29—36; John xii. 12—16.

<sup>d</sup> Judg. v. 10.

<sup>e</sup> Gen. xxii. 3; Num. xxii. 21; Judg. xix. 10; 2 Sam. xvi. 1; xvii. 23.

<sup>f</sup> Judg. xix. 3; 2 Kings iv. 24; Prov. xxvi. 3.

<sup>g</sup> 'Voyages de Chardin,' ed. Langles, iii. 368.

Dr. Russell discriminates three sorts of asses as in use in Syria, the most valuable being the largest sized. The most common, labouring ass is stout and hardy, and is larger than usually seen in this country. Large caravans of them are daily employed in taking provisions from the villages to the towns: they serve also for the plough; and within the cities, as they assist in various kinds of labour, they are seen in every street. Another and larger breed is reserved for the saddle; for people in ordinary circumstances, and many in middling circumstances, commonly ride asses. The Osmanlis indeed are seldom seen but on horseback, but asses are often preferred by the *Sheihs*, or religious men; and although most of the opulent merchants keep horses, they are not ashamed, especially when aged, to appear mounted on asses. Saddle-asses, of the best sort, bear a high price; they are such as described in the quotation from Chardin—tall, delicately limbed, go swiftly in an easy pace, or gallop, and are very docile. They are fed and dressed with the same care as horses; the bridle is ornamented with fringe and cowries, and the saddle, which is broad and easy, is covered with a fine carpet. The stirrups are made in the European manner, not in the broad box-like fashion of those used for horses.

There is a third variety of the ass, which is known in Syria by the name of the *Damascus Ass*, because it is numerous in that city. It has an enormous long body, and ears of a remarkable length. It is taller than the common sort, its skin smoother, and of a much darker colour. It is often employed by the bakers in transporting flour and brushwood. A rider on this animal, sitting almost close to the tail, when viewed from behind, has the figure of a centaur.

We have seen that a larger size is the characteristic of the ass preferred for the saddle; but yet a recent traveller describes the Syrian ladies as “riding upon donkeys, which are not much larger than the largest kind of sheep; they have great strength, and a pleasant gait.”<sup>a</sup>

From the number and distinction of races indicated in the preceding account, it becomes more than probable that some of the varied names which the Scriptures apply to the ass refer rather to those varieties in the animal than, as translators have supposed, to the condition of sex or age in the same variety. Thus in the list of domestic animals presented by the king of Egypt to Abraham, we read of the *חמור* *chamor*, and *אתון* *atun*, rendered respectively, “he-ass” and “she-ass.” But as, on tracing the words through the Scripture, we find that *chamor* occurs in a middle sense, as applied to the ass in its average character, while the *atun* is connected with circumstances of dignity and value, it becomes probable that the former was the common labouring ass, while the latter was of a breed of peculiar value and beauty, used exclusively for the saddle. It is a colt of the *atun*, which, in the poetical benediction of Israel, Judah is described as possessing, and binding to the choice vine of Sorek.<sup>b</sup> Twenty asses distinguished by this name, were given by Jacob to Esau.<sup>c</sup> The ass on which Balaam rode—the ass that spake—was an *atun*; <sup>d</sup> of the same were the asses which were lost by Kish, and which his son Saul sought with unavailing diligence, but found—a kingdom.<sup>e</sup> Of these also were the asses belonging to king David, which were entrusted to the care of an officer of dignity.<sup>f</sup>

The *Wild Ass*, being mentioned as well known in Palestine and Edom as early as the times of Jacob<sup>g</sup> and of Job,<sup>h</sup> it appears to have been of aboriginal antiquity in those countries. From the subsequent allusion to it,<sup>i</sup> its qualities appear to have been familiarly known through the whole period which the Scriptural history embraces.

The name is *פרא*, *para*, which the dialects of Western Asia still preserve with little variation. It may be doubtful whether the word *ערו*, *orud*, indicates a different species, or rather variety of wild ass, or is another name for the same variety. Our translators render this, as well as the other, by “wild ass,” which we much prefer to Good’s attempt to mark a difference by giving the

<sup>a</sup> Paxton, 15.<sup>b</sup> Gen. xlix. 11.<sup>c</sup> Gen. xxxii. 15.<sup>d</sup> Num. xxii. 23.<sup>e</sup> 1 Sam. ix. 3.<sup>f</sup> 1 Chron. xxvii. 30.<sup>g</sup> Gen. xvi. 13.<sup>h</sup> Job vi. 5; xi. 12; xxiv. 5; xxxix. 5–8.<sup>i</sup> Isa. xxxii. 14; Jerem. ii. 24; xiv. 6; Hos. xiii. 15; Eccles. xiii. 9.

latter as "*wild mule*" It might be better to preserve both names untranslated, at least in the description which we find in Job :—

" Who hath sent forth the *PARA* free?  
Or the bands of the *ORUD* who hath loosed?  
Whose house I have made the wilderness,  
And the barreu land his dwelling.  
He scorneth the multitude of the city;  
To the cry of the driver he attendeth not.  
The range of the mountain is his pasture,  
And he seeketh after every green thing."—Job xxxix. 5–8.

The Scriptural intimations should be used as materials for the natural history of this animal. From the passage now cited, it appears that the wild ass was an animal of the desert and the mountain—perhaps changing from the one to the other with the season, and bounding, as if in exultation, at his freedom from the yoke man had imposed upon his kind. It seems also that it was less an inmate of Palestine than of the bordering plains and mountains. The intense and untameable wildness of the animal is implied in nearly all the allusions to it; hence its adoption as the symbol of a perverse and incorrigible character in man, in which sense it occurs several times—as in Job xi. 12: "Vain man would be wise, though he be born a wild ass's colt." The Arabs still describe an "ass of the desert" an indocile and contumacious person. The animal brayed not over his grass—that is, when his food abounded;\* and in times of excessive drought, and therefore of corresponding scarcity of food to man and beast,—

" The wild asses stood upon the plains,  
And snuffed up the wind like dragons:  
Their eyes were wasted, for there was no grass."—Jer. xiv. 6.

We are also assured by an Apocryphal writer that the wild ass (*onager*) was the prey of the lion in the wilderness.<sup>b</sup>



[The Wild Ass. From a Drawing by Col. C. H. Smith.]

\* Job vi. 5.

<sup>b</sup> Eccles. xiii. 9.

The Wild Ass stands much higher on its limbs than the common ass. Its legs are longer and more slender, and it is altogether a more graceful and symmetrical animal, with a greater predominance of equine forms and qualities than the domestic ass exhibits, and having therefore less resemblance to it than to a very fine mule. The mane is composed of short erect hair of a dusky hue, and rather woolly texture. The colour of the body is uniform silvery grey, with a broad coffee-coloured stripe extending down the back, from the mane to the tail, and crossed on the shoulder by the same transverse band which the domestic variety exhibits. The head of the species west of the Euphrates is much finer than that of Persia and Central Asia, and is altogether a considerably handsomer animal. Indeed, we are informed by Colonel Smith (to whom we are indebted for the figure we give), that not only is the Syrian wild ass larger and more handsome than the Ghurkhud of Persia, but that the species improves west of the

Euphrates, and is very fine in the Bahar el Abaid in Africa. We know not on what authority it is usually affirmed that the wild ass has withdrawn beyond the Euphrates, and no longer exists in Asia west or south of that river. The facts we have just stated evince the contrary. Rauwolf, travelling from Tripoli to Aleppo, says, "In these countries are a great many wild asses, called *Onagri*," and proceeds to describe the use made of its skin in forming the scabbards of swords and daggers;<sup>a</sup> and Nau declares that he saw gazelles and wild asses among the wild animals in the plains of Sharon.<sup>b</sup> Burckhardt declares that the wild asses are "found in great numbers" in Arabia Petræa, near the gulf of Akaba. "The Sherarat Arabs hunt them, and eat their flesh, but not before strangers. They sell their skins and hoofs to the pedlars of Damascus, and to the people of the Haouran. The hoofs furnish materials for rings, which are worn by the peasants on their thumbs, or fastened under the arm-pits, as amulets against rheumatism."<sup>c</sup> In Persia the wild ass is a favourite object of chase, and its flesh is esteemed much as we esteem venison; and as such is served up on high occasions at royal tables.

Of *Mules* there are various breeds in Syria. Some very beautiful animals are produced between high-blood Arab mares and well selected male asses. Indeed, it is the general opinion in the East that the breed is much finer in all cases where the mother is a mare, than when the mother is an ass. Mules are noticed in the reign of David, who himself had a mule of state for his own riding.<sup>d</sup> Probably they were known much earlier—even in the time of Moses; but the reader may be warned that the word rendered "mules" in Gen. xxxvi. 24, has not really that meaning, but probably signifies "warm baths." Mules appear to have been brought to the Hebrews from other nations; and in the more recent periods of their history we find that the more valuable ones came from Togarmah, or Armenia.<sup>e</sup> The great mules of Persia, celebrated for their swiftness (the mothers of which were mares) are mentioned in Est. viii. 10.



[Saddled Mule.]

The better sort of mules, which are capable of carrying heavy loads, are employed in the caravans; and the common sort are of great service for the mill and water-wheels. Both are maintained at less expense than horses, and being surer footed, are better suited for traversing the rugged roads in mountainous countries. The domestic trade with the maritime towns and the mountains is not only carried on chiefly by mule caravans, but they are sent even to Erzeroum, Constantinople, and other remote towns. In these caravans the male travellers are mounted on mules lightly laden (usually with the mere personal baggage of the rider); and the women either ride in the same manner (sitting astride, as they always do, like men), or ride in a kind of wooden cradle (called *Muhaffy*) hung on one side of the mule with another to balance it, occupied or not, but made equiponderant on the other. But persons of a certain rank travel in a kind of litter carried by two mules. Within the towns, and in short excursions to the circumjacent gardeus, asses generally have the preference, and the mules are charged with the luggage. Burckhardt<sup>f</sup> states that the breed of Baalbec mules is much esteemed, and that he had seen some which were worth, on the spot, 30*l.* or 35*l.*—a large sum in that quarter.

*Camels* are very frequently mentioned in the Scriptures, so as to show that they were from the earliest times in common use among the nomades, and that they were also of important service, at all times, to the settled inhabitants of Palestine and the neighbouring countries.

<sup>a</sup> Rauwolf, 58.

<sup>b</sup> Nau, 15.

<sup>c</sup> 'Notes on Bedouins,' 125.

<sup>d</sup> 2 Sam. xiii. 29; xviii. 9, 10; 1 Kings i. 33; 1 Chron. xii. 40; Psalms xxxii. 9.

<sup>e</sup> Ezek. xxvii. 14.

<sup>f</sup> Syria, 16.

It is surprising how little is known to the public of this most useful animal. Travellers supply but little information concerning it, and the notices in books of zoology are unsatisfactory and incorrect. Lieut. Wellsted accounts for this by the supposition that every individual traveller conceived the subject to be too important to have escaped his predecessors and naturalists in general, as, in truth, it appears to have done.

The traveller just named, applies himself to supply this deficiency, and furnishes a very complete and satisfactory account of the animal. Burckhardt had previously supplied a very valuable mass of information on the subject. These two form the only tolerable accounts of the camel which we possess; and it is from them chiefly that the following statement is derived. As the information thus furnished has not yet found its way into zoological books, we have the more pleasure in introducing the substance of it to the notice of our readers.

As a general rule, it may be observed that the camels of northern countries are larger, and have more and darker hair than those of the south. Thus the camels of the Syrian deserts are larger, more hairy, and darker than those of Arabia and Egypt; but smaller, less hairy, and lighter than those of Anatolia, and Northern Persia, and of the Turkmen and Kourds. It bears heat and thirst better than these latter, but is much affected by cold, which kills many of them even in the desert. Much curious information respecting the different breeds may be found in Burckhardt. The countries most rich and abundant in camels is undoubtedly the province of Nejed in Arabia, entitled on that account *Om el Bel*, or Mother of Camels. It furnishes Syria, Hedjaz, and Yemen with camels, which in those countries become worth double the price originally paid for them in Nejed. The Turkmen and Kourds of Anatolia purchase yearly from 8000 to 10,000 camels in the Syrian deserts, of which the greater number are brought there from Nejed. But it is the camel of Oman which is celebrated in the songs of Arabia, as the fleetest and most beautiful; and, in fact, the legs of the Oman camels are more slender and straight, their eyes more prominent and sparkling, and their whole appearance denotes them of higher lineage than the ordinary breeds of this animal. In mountainous countries camels are scarce certainly: but it is a mistaken impression that camels are not capable of ascending hills; for, provided they are rough, they can ascend the steepest and most rugged paths with as much facility as mules. The feet are large and spreading, and covered at the lower part with a rough flexible skin. It is an erroneous opinion that the camel delights in sandy ground. It is true that he crosses it with less difficulty than any other animal: but wherever the sands are deep, the weight of himself and his load makes his feet sink into the sand at every step, and he groans and often sinks under his burden. Hence the skeletons of camels are found in the greatest numbers where the sands are the deepest. The soil best adapted to their feet, and which they traverse with the most facility, is that of which the desert is usually composed, a dry and hard but fine gravelly plain.

In years of scarcity the camel is always barren. If the birth of a camel, as is often the case, happens on a journey, the Bedouin receives it in his arms, and places it for a few hours on the back of its mother. But at the first halting-place the little stranger is put down to receive the parent's caresses, and always after it continues to follow her footsteps unassisted. At the beginning of the second year the young camels are weaned; in the fourth year they begin to breed.

Accustomed even from its birth to long and toilsome journeys, little training is necessary, beyond proportioning the weight to its tender age, to inure them to the carrying of burdens; and they voluntarily kneel when about to be loaded for a journey, a position which their great height renders necessary. Kneeling is their natural state of rest, but when heavily laden on flinty or stony ground, it cannot be accomplished without pain. They then drop at once on both front knees, and in order to establish room for their hinder legs, are compelled in that condition, and whilst encumbered with the whole weight of the burthen, to plough them forward. The callosities on their joints, although nearly of a horny nature in the aged camels, seem insufficient to defend them, and it is impossible for the European to view the act without commiseration. In consequence of this the Bedouins never make them kneel to

mount themselves, but either cause the animal to drop his neck to receive their foot, and on their raising it the rider is enabled to gain his seat, or they climb up behind; it pleases them much when a stranger can accomplish either of these feats.

The distinction between the Camel and the Dromedary is not that the former has two humps and the latter but one, as very frequently has been stated and very generally believed. Both have but one hump, and the dromedary is distinguished from the camel only by its higher breed and finer qualities—as the high blood race-horse is distinguished from the cart-horse. Whenever an Arab perceives in one of his camels any indication of its being small and active, he trains it for the purpose of riding; and if it be a female, he takes care to match her with a fine high-bred male, whereby the fine dromedary races are improved and perpetuated. These animals, destined exclusively for riding, are called *hedjein* in Egypt, and *delout* in Arabia. The two-humped camel is the northern or Bactrian camel—the camel of Central Asia, and found, by migration with man, in the Crimea, and in the other countries which border the Caucasian mountains. In South-western Asia this camel is scarcely known. Stephens<sup>a</sup> assures us, that on the starting of the Mecca caravan he had seen together as many as perhaps 20,000 camels and dromedaries, and had not seen among them more than half a dozen with two humps. Burckhardt also says the Arabs have no dromedaries with two humps, nor did he ever see or hear of any in Syria. It is true that in Anatolia there is a two-humped breed, produced between the two-humped male dromedary brought from the Crimea and a Turkman she camel. But one of the two small humps which the progeny exhibits is cut off immediately after birth, to render it more fit for bearing a load.<sup>b</sup> The single hump of the Arabian and Syrian camels continues round and fleshy while the animal is in good condition; but, by a remarkable provision of nature, this excrescence by its gradual absorption supplies the place of other nourishment under circumstances of privation. Few creatures exhibit so rapid a conversion of food into fat as camels. A few days of rest and ample nourishment produce a visible augmentation of flesh; while, on the contrary, a few days employed in travelling without food, reduce the creature almost immediately to little more than a skeleton, excepting the hump, which much longer resists the effects of fatigue.<sup>c</sup>

The first thing, therefore, about which an Arab is solicitous, on commencing a long journey, is the state of his camel's hump. If this is in good condition, he knows that the animal is in a state to endure much fatigue on a very moderate allowance of food, believing that, according to the Arabic saying, "the camel feeds on its own hump." The fact is, that as soon as the hump subsides, the animal begins to desist from exertion, and gradually yield to fatigue. After the creature has in this manner lost its hump, it requires three or four months of repose and copious nourishment to restore it, which, however, does not take place until long after the other parts of the body have been fully replenished with flesh. It is in these facts, which exhibit the hump as a provision of food (so to speak) for the exigencies of protracted travel across the deserts, that we discover the adaptative use of this curious, and, as might seem to the cursory observer, needless excrescence.

While young, camels are pretty-looking animals; but when aged and over-worked, they generally lose their hair, and become very unsightly objects. In general they have a clean sleek coat, usually of a light-brown colour, with a fringe of dark hair along their neck; but

<sup>a</sup> 'Incidents of Travel,' 248.

<sup>b</sup> We should not wonder if this prove the foundation of the amusing story which Stephens says he was repeatedly told by the Arabs, that all camels are born with one hump, but that the mass is sometimes cut down in the middle, or indented, so as to make two, to adapt the back the better to the saddle. The Arabs obviously could not have told him any such thing, for it involves the contradiction of stating an important use and benefit in a practice, while practically no use was made of it. They doubtless told him just the contrary, being the statement in our text; and it is easy to see how, through the traveller's interpreter badly understanding the Arabs, and the traveller badly understanding his interpreter, the fact which we have stated might be turned into the comical story which he reports. It is evident that his Arabs were not, as he suspects, "quizzing" him; but that they were imperfectly understood by him.

<sup>c</sup> This is Burckhardt's statement. Lieut. Wellsted says just the reverse, namely, that the hump suffers before the general frame of the animal. But he is certainly wrong, and Burckhardt right; and in all cases where these authorities differ, Burckhardt is to be preferred without hesitation. He knew far more of camels than Wellsted; and the statement of the latter, although good and graphic, does not, when closely examined, contain any great quantity of information which Burckhardt had not previously supplied.

this covering in the Arabian or desert camel is less profuse than in that of Upper Asia, which is better adapted to the climate of those regions. In a camel, the brown colour is not esteemed; reddish, or light gray, or reddish gray is preferred. There are black camels. The eye of the camel much resembles that of the gazelle; it is large, dark, soft, and prominent, and retains its peculiar brilliancy under the fiercest glare of the sun and sand.

The price of a camel is found to vary in almost every place. In Egypt the price of *the same* animal may fluctuate from twelve to forty dollars, according to the abundance and cheapness of provisions. A good Nubian dromedary\* will sometimes cost eighty dollars at Cairo. Dromedaries of fine quality are in much demand; fifty or sixty dollars are given for those of a very common kind in Hedjaz. The Oman camels are high-priced. Burckhardt mentions a case in which three hundred dollars, and Wellsted another in which one hundred and fifty dollars had been given for one. But from thirty to fifty dollars is their average price. Depth of chest and largeness of barrel are their chief excellencies.



[Dromedary.]

The great length of the camel's neck enables the animal, without stopping, to nip the thorny shrubs which everywhere abound on the desert, and, although the spines on some are sufficiently formidable to pierce a thick shoe, the cartilaginous formation of their mouth enables them to feed without difficulty. The Bedouin also, when walking devotes a considerable

portion of his time in collecting and feeding his camel with the succulent plants and herbs which cross his path. These, on a journey, with a few handfuls of dates or beans, form its ordinary food; but while encamped, he is fed on the green stalk of the jowaree, and the leaves and tender branches of the tamarisk, heaped on circular mats and placed before the camel, who kneels while he is partaking of them. In Southern Arabia they are fed on salt, and even fresh fish.

During a journey it is customary to halt about four o'clock, remove the loads, and permit the camels to graze around: if the Arabs are desirous of preventing them from straying too far, they tie their fore-legs together, or bind the fetlock to the upper joint by a cord. The head is never secured, excepting whilst travelling, when the Arabs unite them in single file by fastening the head of one to the tail of his predecessor. Towards evening they are called in for their evening meal, and placed in a kneeling posture round the baggage. They do not browse after dark, and seldom attempt to rise, but continue to chew the cud throughout the greater part of the night. If left to themselves they usually plant their hind-quarters to the wind. The male as well as the female voids its urine backwards, and, as the ground then

\* Distinguished for fine make, light colour, and scanty hair. The cut represents this fine variety. Speaking of this species, Burckhardt says:—"The good Nubian hedjeins are so very docile, and have so swift and pleasant an amble, that they supply the want of horses better than any other camels. Most of them are whitish. In swiftness they surpass any of the various camels I have seen in those parts of the East."

becomes wet and uncomfortable, they continue slowly, without changing their recumbent posture, to move themselves forward.

Authorities differ with respect to the camel's capability of enduring thirst. From the data collected by Burckhardt, it appears that the power varies much in the different races of the camel, or rather according to the habits respecting the exercise of this faculty which have been formed or exacted by the heat or cold, the abundance or paucity of water, and the state of vegetation in the country in which they have been brought up. Thus the camels of Anatolia, during a summer journey, require water every second day, while the camels of Arabia can dispense with it, until the fourth, or even fifth. But then again much depends on the season. In spring, when the herbage is green and succulent it supplies as much moisture as the animal's stomach requires; at that season, therefore, the journey across the great Syrian desert from Damascus to Baghdad (twenty-five days) may be performed without any water being required by, or given to the camels; at that time of the year only, therefore, a route destitute of water can be taken. In summer the route by Palmyra is followed, in which wells of water can be found at certain distances.<sup>a</sup> Burckhardt reckons that all over Arabia, four entire days constitute the utmost extent to which the camel is capable of enduring thirst in summer. In case of absolute necessity, an Arabian camel may go five days without drinking, but the traveller must never reckon on such an extraordinary circumstance. The animal shows manifest signs of distress after three days of abstinence. The traveller last named throws much discredit on the popular story of the reserved supply of water in the camel's stomach, for the sake of which the animal is said to be often slain by his thirsty master. He declares that he never heard of this in *Arabia*, and the Darfur caravans suffer much from thirst without any such resource being known. Besides, he had seen weary camels slaughtered without noticing any water in their stomachs, unless they had been watered the same day; and although he, with philosophical caution, does not undertake absolutely to deny the possibility of the circumstance, he does not hesitate to affirm that it can have occurred but seldom; "Indeed, the last stage of thirst renders a traveller so unwilling and unable to support the exertion of walking, that he continues his journey on the back of his camel, in the hope of finding water, rather than expose himself to certain destruction by killing that serviceable creature."

Notwithstanding its patience and other admirable qualities, the camel is gifted with but little sagacity; nor does it appear to be capable of forming any strong attachment to its master, although it frequently does so to one of its own kind, with which it has long been accustomed to travel. In protracted desert journeys the camel appears fully sensible that his safety consists in keeping close to the caravan, for if detained behind, he never ceases making strenuous efforts to regain it.

It is a pity to contradict the pleasing picture which Ali Bey draws of the peaceful dispositions of camels; but the truth must be told, which is, that they are among the most quarrelsome beasts in existence. After the hardest day's journey, no sooner is the baggage removed than the attention of the driver is required to keep them from fighting, as they are prone to give the most ferocious bites and to lacerate each other's ears.

The desert camels, less accustomed to walls and houses than those of Anatolia and Syria, are with difficulty led through the streets of towns when they arrive in caravans; and it being impossible to prevail upon some of the more unruly to enter the gates, it is often found necessary to unload them outside and to transport the bales into the town on asses.<sup>b</sup>

There have been various estimates of the speed of the camel. A sufficient number of authorities are agreed in estimating its ordinary pace at two and a half miles an hour. Calculations made in Syria, Egypt, Arabia and Turkistan agree in this. This is to be understood as the ordinary pace in long caravan journeys, when the animal only *walks*. The saddle-dromedaries are capable of other things, although it may be noted that the long journeys which it can perform in a comparatively short time, are in general effected less by positive speed than by its very extraordinary powers of sustained exertion, day after day, through a time and space

<sup>a</sup> For this see Wellsted, ii., 298; and more particularly, Skinner, ii. 87.

<sup>b</sup> Russell, ii. 271.



which would ruin any other quadruped. For short distances, the swiftness of a camel makes no approach to that of even a common horse. A forced exertion in galloping, the animal cannot sustain above half an hour, and it never produces a degree of speed equal to that of the common horse. Burckhardt believes that twelve miles in one hour is the utmost degree of celerity which the very best dromedary can attain<sup>a</sup> it may perhaps gallop at fullest speed eight or nine miles in half an hour, but it cannot sustain such a rate of exertion for any longer time. A forced trot is not so adverse to the habits of this animal as the gallop, and it can sustain it for several hours without enduring fatigue, although in this pace also the camel is inferior in speed to the horse. Wellsted reports that the Bedouins of Oman perform their desert journeys at a quick hard trot, from six to eight miles an hour, and that the camel can sustain this pace from twenty to twenty-four consecutive hours. A gentle and easy amble of five or five and a half miles an hour is however the favourite quick pace of the dromedary; and if allowed to persevere in it, they will carry their rider an uninterrupted journey of several days and nights. A common caravan journey of twenty-one days is sometimes performed in five days at this rate. The ordinary burden of a camel in a caravan journey is from two hundred and fifty to five hundred pounds; but, for short distances, camels supplied abundantly with food can carry as much as one thousand pounds.

Among the Bedouins, the female camels are always more esteemed, and are dearer than the males, on account of their bearing young, and of the constant benefit of their milk; but the males, on account of their greater spirit, are preferred for riding, although the females are considered more expeditious. In Syria and Egypt, where camels are chiefly wanted for their strength in bearing heavy loads, the males are the most valuable.

Although the camel breeds in the fourth year of its life, it does not attain its perfect growth until the twelfth year. It lives as long as forty years; but after twenty-five or thirty his activity begins to fail, and he is no longer capable of enduring much fatigue. If a camel that has passed its sixteenth year becomes lean, the Arabs say that he can never again be rendered fat; and in that case they generally sell them at a low price to the peasants, who feed their cattle better than the inhabitants of the Desert.

Camels' flesh is eaten with relish, and forms part of all the great feasts of the Bedouins. For slaughter, a female that does not breed is usually chosen. Major Skinner describes the slaughter of a camel in the journey across the Syrian desert. In the first instance he was hamstrung by a cut from a sword;—he sunk to his knees upon this, when another man seized his head, and bent it backwards on his left side, exposing his breast, into which a third plunged a sword up to the hilt. The blood gushing out, covered him completely. The camel died instantly, and in less than an hour was wholly eaten. "I gave my assistance to the latter part of the operation," says the Major, "and found the flesh very well flavoured. Before it was cooked, it had an exceedingly coarse and red appearance." It appears from Burckhardt that a camel is rarely killed. When this does happen, it is cut into large pieces; some part is boiled, and its grease mixed with *borgoul*;<sup>b</sup> part is roasted, and, like the boiled, put upon the dish of *borgoul*. The whole tribe then partakes of the delicious feast. Camels' flesh is more esteemed in winter than in summer; and the she-camel more than the male. The grease of the camel is kept in goat-skins and used like butter. The milk of the camel is of great service to the Bedouins. It is the milk for drink; that of the goats and sheep being generally made into butter. Even the young horse colts, after being weaned from their dams, are fed exclusively on camels' milk for a considerable time, and in some tribes the adult horses partake of it largely. Flour made into a paste with *sour* camels' milk, is a standing dish (called *ayesh*) among the Bedouins. Rice or flour, boiled with *sweet* camels' milk is another (called *behatta*). The useful hair or wool of the camel is easily taken off the skin by a person's hand, towards the end of spring; a camel has seldom more than two pounds of hair. It is applied to a variety of useful purposes by the Bedouins; but in general use the hair of the goat is, for its

<sup>a</sup> Lieut. Wellsted says thirteen to fifteen miles.

<sup>b</sup> Wheat, boiled with some leaven, and then dried in the sun. The dried wheat is preserved for a year, and, boiled with butter and oil, is the common dish with all classes in Syria.

quality, much preferred to that of the camel. One consequence of the short hair (like that of the deer) in the Nubian camel, and also in the sheep, is, that the Bedouins of that country live in huts made of mats and reeds, for want of the materials (goats' and camels' hair) of which tent-coverings are fabricated in Arabia.

The Arabs adorn the necks of their camels with a band of cloth or leather, upon which are strung or sewn small shells, called cowries, in the form of half-moons: to these the sheikhs add ornaments of silver, so that even at the present day they will form a valuable prize to the spoiler. We possibly have here an illustration of some passages in holy writ (as Jud. iii. 20, 26), where camel ornaments are mentioned in connection with jewels and other articles of value. The shells are strung in a semicircular form: hence the phrase, "ornaments like the moon."

If a camel happens to break a leg, it is immediately killed, as such a fracture is deemed incurable. The camel is laden as it kneels, and although the load is often laid on recent wounds and sores, no degree of pain or want ever induces the generous animal to refuse the load, or attempt to cast it off. But it cannot be forced to rise, if from hunger or excessive fatigue its strength has failed; it will not then do this, even without the load. Under such circumstances camels are abandoned to their fate.\* It is seldom they get on their legs again, although instances have been known where they have done so, and completed a journey of several days. Wellsted tells us he had often passed them when thus abandoned, and remarked the mournful looks with which they gazed on the receding caravan. When the Arab is upbraided with inhumanity, because he does not at once put a period to the animal's sufferings, he answers that the law forbids the taking away of life save for food; and even then, pardon is to be implored for the necessity which compels the act. When death approaches the poor solitary, vultures and other rapacious birds which espy or scent their prey at an incredible distance, assemble in flocks, and, darting upon the body, commence their repast even before life is extinct. The traveller continually sees remains of this faithful servant of man, exhibiting sometimes the perfect skeleton, covered with a shrunk shrivelled hide, sometimes the bones only, altogether deprived of flesh, and bleached to dazzling whiteness by the scorching rays of a desert sun.

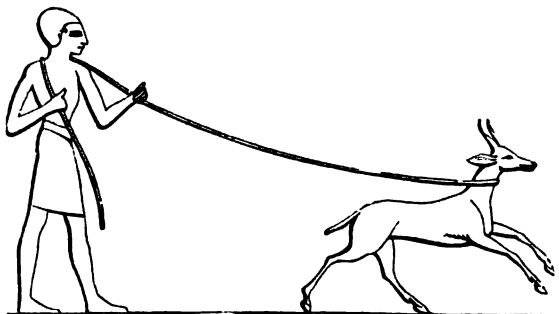
*Gazelles* are common in Palestine, and abound in the Syrian desert. It is difficult to conceive creatures more beautiful, or any whose frame and organization is adapted to its proverbially rapid motions. The beauty of their large and lustrous, yet mild, black eyes, supplies a thousand allusions to the poets and orators of the East, who think they bestow on a woman the most rapturous commendation when they say "She has the eyes of a gazelle." Its speed supplies similar allusions, and "Swift of foot as a gazelle" expresses the most extravagant admiration of fleetness in a horse or in man. So it was among the ancient Hebrews; as where reference is made to the speed of



[Gazelles.]

\* See a striking instance of this in Stephens, ii. 116.

Asahel,<sup>a</sup> and where David, in his elegiac lamentation for Jonathan, apostrophises that tender friend,—“O, antelope of Israel! pierced in thy high place!”<sup>b</sup> The Hebrews were allowed to eat its flesh,<sup>c</sup> and the manner in which the necessary difference between the mode of slaughtering a wild and a domestic animal is alluded to,<sup>d</sup> evinces that it was an object of chase to that people, as indeed the permission to eat it implies. We have eaten of its flesh, and found it very good, equal to, and little different from our venison. The gazelle was a conspicuous object of chase among the ancient Egyptians; the reader will notice the large numbers (comparatively) in which it appears in the hunting piece at p. cclcx. From that it appears to have been hunted with hounds, although no present hound or greyhound of



[Gazelle caught with lasso.]

that country or of Western Asia is now able to overtake it. It was also caught by the lasso, and as the chasseur by whom it is used is always represented on foot when throwing it, we must suppose that he lay in ambush for the purpose, and that it was principally adopted when it was wished to take the animal alive. In the cut at p. cclcx we see a gazelle taken alive, and carried home to stock the preserves; for it appears that large herds of gazelles were kept by the landed proprietors of

Egypt in fenced enclosures. The noose employed in Egypt was very similar to the South American lasso, but with the difference in the mode of use which has just been pointed out.

The gazelles are gregarious animals, and in Syria often appear in large herds within a few miles of the towns. They permit huntsmen, if they advance gently, to approach very near them, and do not seem to care much for a caravan passing at a little distance; but the moment they take alarm they bound away, casting from time to time a look behind, and if they find themselves pursued, they lay their horns backward almost close on their shoulders, and flee with incredible swiftness. The greyhounds, although reckoned fleet, cannot overtake them without the aid of the falcon; and as they take alarm the instant they discover the presence of dogs, the huntsmen endeavour to steal upon the gazelle unawares, and to get as near as possible before the dogs are slipped, and then pushing on at full speed, they throw off the falcon, which being taught to strike at or fix on the cheek of the game, confuses it and retards its course until the greyhounds are able to come up. Although the noble beast be thus interrupted, the huntsman must ride hard who would be in at the death.<sup>e</sup>

Burckhardt informs us that on the eastern frontiers of Syria are several places allotted to the hunting of gazelles. An open space in the plain, of about one mile and a half square, is enclosed on three sides by a wall of loose stones, too high for the gazelles to leap over. Gaps are left in different parts of this wall, and near each gap a deep ditch is made on the outside. This enclosure is situated near some rivulet or spring to which the gazelles resort in summer. When the hunting is to begin many peasants assemble and watch till they see a herd of gazelles advancing from a distance towards the enclosure, into which they drive them. The gazelles frightened by the shouts of these people, and the discharge of fire-arms, endeavour to leap over the wall, but can only effect this at the gaps, where they fall into the ditch

<sup>a</sup> 2 Sam. ii. 18.

<sup>b</sup> 2 Sam. i. 19.

<sup>c</sup> Deut. xiv. 8.

<sup>d</sup> Deut. xii. 15, 22; xv. 22.

<sup>e</sup> Here is an account of an extemporaneous gazelle chase.—“We suddenly came in sight of a large herd of antelopes, which appeared to be of the species called by us gazelle. The Arabs seized their lances, we drew our pistols, and distributing ourselves in an immense circle, we walked our horses towards them slowly. They heeded us not till we approached near, when they began to hold up their beautiful heads, adorned with slightly curved tapering horns, and trotted up together: then seeing us spurring our horses from behind the little hillocks all around them, they dashed through us with the rapidity of mind; lances were thrown, pistols discharged, but all in vain; they quickly distanced the fleetest horse, which was a grey Arab mare, and then stopped, and turned round, and looked at us, and then took to their heels again, bounding over the ground in such a way that they appeared to fly rather than to run.”—Addison’s ‘Damascus and Palmyra,’ ii. 340.

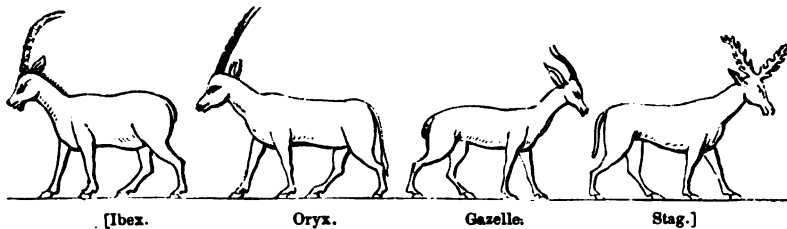
outside, and are easily taken, sometimes by hundreds. The chief of the herd always leaps first, and the others follow him, one by one. The gazelles thus taken are immediately killed, and their flesh sold to the Arabs and neighbouring Fellahs. Of the skin a kind of parch-ment is made, used to cover the small drum with which the Syrians accompany some musical instruments or the voice. When taken young, gazelles are easily domesticated; we have seen them quite at ease and familiar in the court-yards of inhabited houses in the East.

The animal which we have figured (after Laborde) is *not* the *Antilope dorcas*, to which natu-ralists usually give the name of gazelle. We *know* that the animal figured is the true gazelle, and suppose it to be the same which Hemprich and Ehrenberg mention as the Ariel Antelope (*A. Arabica*), so called from its light, elegant and graceful form. It is indeed not unlike the other antelope (*A. dorcas*), but that animal is of a heavier and less elegant make, its colour is lighter, and, although very fleet, is considerably less active than the true gazelle.

This animal also doubtless exists in Syria. We do not indeed find it distinctly *named* by any competent traveller; but Russell describes its prominent characteristics and relation to the true gazelle in terms which it seems necessary to refer either to this species or to the Ahu.<sup>a</sup> However, we are content to have noticed the true gazelle, without involving our readers in the obscurities which involve every attempt to determine *critically* the distinctions of the species of the antelope genus found in Western Asia.

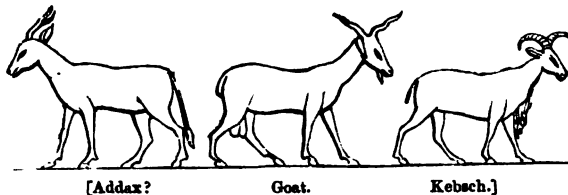
Of the *Cervidæ* no example appears to exist in Syria and Palestine; but we are by no means clear that the Common Stag may not claim one of the names in Scripture which are of difficult appropriation, but which appear to refer to animals of the antelope, deer, and goat kinds. We have the satisfaction of finding the stag among the animals represented in the Egyptian sculptures; and although it does not now exist in 'the valley of the Nile, or in the deserts east thereof, Sir J. G. Wilkinson was assured that it was still seen in the neighbour-hood of the Natron Lakes.

We here introduce some figures of horned animals, objects of chase, from the Egyptian.



sculptures. The two middle figures are the only two species of the antelope genus which the sculptures represent, unless the newly identified animal, the *Addax*, be intended to be repre-sented in another figure of obscure character, as shown in the first figure of the following engraving.

The Oryx<sup>b</sup> and Addax are not natives of Syria, or even of Egypt, at present; although the



former, at least, certainly was found there in ancient times. It was a conspicuous object of

<sup>a</sup> *Antelope subgutturosa.*

<sup>b</sup> Abu Harb. — *Antelope leucoryx.*

the chase. The cut at p. cccclxi represents a man carrying home a dead oryx. It was one of the animals tamed by the Egyptians, and kept in great numbers in the preserves of their villas. We are induced to notice it in this place from the fact that this is the most celebrated of all the genus, being that which appears to have given rise to the famous *Unicorn* of the ancients, and to which there are so many references in Scripture. The animal is about the size, and has much general resemblance to a large ass, and its very long, thin, annular, and slightly curved horns, have a perfect resemblance to that which is ascribed to the unicorn of the heralds. The horns lying comparatively close to each other, the animal seems at a distance, and in various points of view, to have but one horn; and in the Egyptian representations, which are almost always in profile, only one horn is usually seen.

Goats are frequently mentioned in the Scriptures as forming a very important portion of the flocks. Indeed, the many useful qualities of the goat seem to have recommended it almost as early as the sheep to the care of the early pastoral tribes. When proper attention is paid to this animal, it is scarcely exceeded by the sheep in usefulness to man. Its flesh is much esteemed in the East, and that of the kids is most excellent. The hair is more valued than that of the camel, and, as at the time when the Israelites sojourned in the wilderness,<sup>a</sup> goats' hair among all the Bedouins constitutes the material of which the coverings of tents are made, as well as camel and provision bags. The milk also is now, as among the ancient Hebrews, highly esteemed.<sup>b</sup> From the beginning of April to September the towns are supplied with milk by large herds of goats, which pass through the streets every morning, and are milked before the houses of the customers. The products from the milk are furnished in abundance at the same season. Butter and cheese are, among the nomades who principally supply the towns, made of goat's and sheep's milk, although cow's milk is also used in the towns. It may be had fresh through this season. So may *kaïmak*, which has some resemblance to Devonshire cream. And, above all, there is *leben*—a scriptural name for the same thing—sour buttermilk, which forms the principal beverage of the Arabs, and is much used in their dishes. Large quantities are also consumed in the towns. While the season lasts it makes up a great part of the food of the poorer classes; it is also served up at all tables, either in small bowls by itself, or mixed up with salad-herbs, and is sometimes poured over the roast meat and ragouts. *Leben* from the milk of the buffalo is also much esteemed. These things are brought to the towns from the villages and the camps of the wandering tribes. The Scriptural name of *haleib* is still applied to fresh milk, as that of *leben* is to sour.

Of the skins of the goat leather bottles are made. These are often mentioned in the Bible. When intended for water, the hairy side of the skin is external; but in wine-bottles the hairy side is internal. Of the skins of kids, small bottles, which answer the purpose of flasks, are made.

The treatment of goats in the flock is little distinguished from that of the sheep; we shall therefore only notice one fact which has come under our own cognizance;—that in mixed flocks of sheep and goats, the old he-goats assume the head and pre-eminence, not only over their own species, but over the whole flock. And to this, they, by their superior physical energies, seem fairly entitled.

There are two domestic varieties of the goat in Syria. One of them differs in no considerable degree from the British goat; but the other is of larger size, and is distinguished by its pendulous ears, often a foot in length, and for the ram-like form and character of the head. The goats of the Arabs also are mostly of this long-eared species, and their colour is generally black.—Hence the black colour of the Arab tents, which are commonly made with its hair, which is very ample. It yields very sweet and excellent milk in a profuse quantity; it is therefore preferred as a milch-goat, and many large towns derive nearly their whole supply from it. Rauwolf says that among the goats at Aleppo “there are some, not very large, whose ears are two feet long, and so hang down to the ground as to embarrass the animal when it feeds.” He adds that one of these ears is usually cut off, and that then the animal turns on that side in feeding, that

<sup>a</sup> Exod. xxv. 6, 26.

<sup>b</sup> Prov. xxvii. 27.

he may not be inconvenienced by the remaining ear. At Jerusalem he gives the same length to the ears of some of the goats. The long ear of this species seems to be alluded to by the prophet Amos (iii. 32) when he describes a shepherd as saving from the mouth of the lion only "two legs, or a piece of ear."

Burckhardt notices a valuable "species" of domestic goat in the valley of Baalbec, which appears from the description to be a variety, or a very fine breed, of that which has now been noticed. "The goats are of a species not common in other parts of Syria; they have very long ears, large horns, and long hair, but not silky like that of the goats of Anatolia." It is not impossible, however, that the celebrated Angora species of goat, with its hair resembling silk, and called "camel's hair," was known to the ancient Hebrews. The allusion in Solomon's Song iv. 1, 2; vi. 5, may apply exceedingly well to this species; and Shulze<sup>a</sup> assures us that he saw flocks of these goats descending from the mountains in the vicinity of Acre and Cæsarea.



[Syrian Long-eared Goat.]

Of *Wild Goats* there is frequent mention in the Scriptures. We presume that the names there employed refer to the two species whose existence in Palestine, Edom, and Sinai has been ascertained. These are the *Ibex* and the *Kebesch*. It happens that these two are also the only wild goats figured on the Egyptian monuments.<sup>b</sup>

The *Ibex* is very similar to the Bouquetin of the Alps. It is called in Arabic *Beden* and *Táytal*. The former appellation is exclusively applied to the male, which is readily distinguished by a beard and large knotted horns, curving backward over the body. The female has short erect horns, scarcely larger than those of the gazelle; and being of much smaller and lighter structure, we suspect that it has sometimes been mistaken for a different species. Burckhardt informs us that in all the wadys south of the Modjeb (Arnon), and especially in the wadys Modjeb and El Ahsa, large herds of these "mountain goats" are found, forty or fifty together. They are killed by the people of Kerek and Tayfle, who hold their flesh in high estimation. They sell the large knotted horns to the Hebron merchants, who carry them to Jerusalem, where they are worked into handles for knives and daggers. The traveller himself saw a pair of the horns at Kerek three feet long. The Arabs told him that it was difficult to get a shot at them, and that the hunters hide themselves among the reeds on the banks of streams where the animals resort in the evening to drink. They also asserted that, when perceived, the animals will throw themselves from a height of fifty feet and more upon their heads without receiving any injury. The same thing is asserted by the hunters in the Alps.

<sup>a</sup> In Paulus's Collection of Travels, vii. 108.

<sup>b</sup> The common domestic milch-goat is seen in the central figure in the second cut at p. cccxciii. The ibex occurs in the hunting scene at p. cccix, and in the first figure of the first cut at p. cccxlii. The kebsch is seen as the third fig. in the second cut in the same page.

The same traveller had occasion to notice the Ibez again among the Sinai mountains, where it is common. There the chase of the *Beden* resembles that of the Chamois of the Alps, and requires as much enterprise and prudence. The Arabs make long circuits to surprise them, and endeavour to come upon them early in the morning when they feed. The goats have a leader, who keeps watch, and on any suspicious sound, smell, or object, makes a noise, which is a signal for the flock to make their escape. They have much decreased of late years in the Sinai peninsula, if we may credit the Arabs, who say that fifty years ago, if a stranger came to a tent, and the owner of it had no sheep to kill, he took his gun and went in search of a *Beden*. They are, however, more common there than in the Alps, or in the mountains to the east of the Red Sea. The flesh is excellent, and has nearly the same flavour as that of the deer. The Bedouins make water-bags of their skins, and rings of their horns, which they wear on their thumbs. When the animals are met with in the plains, the dogs of the hunters easily catch them, but they cannot come up with them among the rocks, on account of the tremendous leaps which they make from the heights.

The *Kebseh* of the modern Arabians is also called the *Wild Sheep*, although it seems to have more of the goat than the sheep. At all events, its equivocal position indicates the present as the proper place for it. It is found in Sinai and in the mountains which border the valley of the Nile, even to Ethiopia and Abyssinia; and there is little doubt that it formerly existed in the southern districts of Judea beyond Jordan. It is supposed by some to be the  $\text{קֶבֶשׁ}$ , *akko*, of Deut. xiv. 5, rendered "wild-goat;" but there are others who, we think with less probability, refer this name to the *Saiga*, still called *Akkak* by the Tartars, and *Akkim* by the Turks, while some assign it to the Ibez. The female kebsch is between two and three feet high at the shoulder, and its total length from the nose to the end of the tail is little more than four feet; but the male is longer,



[Kebseh—*Ovis Nagilophus*.]

and is provided with stronger horns, which are about five inches in diameter at the roots, and are curved downward towards the neck. The whole body is covered with hair, like many of the Ethiopian sheep, and the throat and thighs of the fore legs are furnished with a long pendant mane. This peculiarity is clearly exhibited in the Egyptian sculptures, and this suffices to evince the identity of the kebsch wherever its figure is represented.<sup>a</sup>

*Sheep.* The Israelites and their patriarchal fathers had large possessions of sheep; and the allusions to sheep, to flocks, to shepherds, and to sheep-keeping, are frequent throughout the sacred books.

There are two varieties of sheep in Syria. The first, called the *Bedouin Sheep*, differs not much from the large breed in Britain, except that the tail is somewhat longer and thicker, and

<sup>a</sup> The principal authorities for the preceding notice of goats are—Russell, i. 118; ii. 150; Burchardt, ("Notes,") 114, ("Syria,") 15, 405, 526, 534, 590; Wilkinson, iii. 25; Rauwolf, 96, 275; Morison, 149, 468; Nau, 538, 648; D'Arvieux, ii. 276; Buckingham, (A. Tribes,) 468; Paxton, 35.

the ears rather larger. They derive their name from the circumstance that the flocks of the Bedouins are composed of this species.

The other species is very common in Syria, and on account of its extraordinary tail has been much noticed by nearly all travellers in the East. The carcase of one of these sheep, without including the head, feet, entrails, and skin, generally weighs from fifty to sixty pounds, of which the tail makes up fifteen pounds; but some of the largest breed, that have been fattened with care, will sometimes weigh 150 pounds, the tail alone composing a third of the whole weight.<sup>a</sup> This tail, a broad and flattish appendage, has the appearance of a large and loose mass of flesh or fat, upon the rump and about the root of the tail; and, from the odd motion which it receives when the animal walks, one would suppose it connected to the animal's body only by the skin with which it is covered. This skin is usually invested with thick wool on the upper surface of the tail. In the Egyptian variety<sup>b</sup> this tail is quite pendulous and broad throughout; but in the Syrian



[Fat-tailed Sheep.]

variety the tail narrows almost to a point towards the end, and the extremity is turned up. This is a great convenience to the animal. The sheep of the extraordinary size mentioned before, are very rare, and usually kept in yards, so that they are in little danger of injuring the tail as they walk. But in the fields, in order to prevent injury from the bushes, the shepherds, in several places of Syria, fix a thin piece of board on the under part (which is not like the rest covered with wool), and to this board small wheels are sometimes added. From this, by the help of a little exaggeration, we have the story of the Oriental sheep being under the necessity of having carts to carry their tails. This could never be necessary in Syria, where, from the manner in which the extremity of the tail is tucked up, no enlargement of size could make it trail on the ground. The African sheep do not enjoy this advantage, and with respect to them it may not be equally necessary to dispute the story told by Herodotus, Ludolph, and others. The tail is entirely composed of a substance between marrow and fat, serving very often in the kitchen in the place of butter, and, cut into small pieces, makes an ingredient in various dishes. When the animal is young it is little inferior to the best marrow. The only allusion to this appendage which we can discover in the Scriptures is in that which names "the fat of the tail," or "the fat-tail," as one of the parts of sacrificial victims which was to be consumed upon the altar.

In the more populated part of the country, it is not usual to see *flocks* of sheep, although

<sup>a</sup> Tails much exceeding this are mentioned by travellers. Ludolph saw a sheep's tail weigh eighty pounds in *Egypt*; and Symon Simion speaks of the sheep-tails in that country as weighing seventy pounds. But Russell affirms that tails of such size must have been produced by pampering the animals with bran and barley. The average weight of the tail in this sheep, in different countries, may be taken at from twenty to thirty pounds. Villamont says he saw them in Syria to weigh thirty-three pounds and upwards (*Voyage*, liv. v. p. 628).

<sup>b</sup> This is the variety represented in our cut, having been unable to procure a good figure of the Syrian variety. There is no perceptible difference, except in the circumstance indicated in the text.



flocks of goats are often observed, with their keeper. But numerous sheep (fat-tailed) are seen individually, or in twos and threes, being the small separate property of the several inhabitants. They have usually a string about their necks, by which they are fastened when at home, and led about and managed when out at pasture. "We may see them," says Paxton, "led about in the gardens and vineyards, and out on the mountain side; a boy or a girl is usually in attendance upon each sheep. In the evening I have often seen them bringing the sheep to the springs and pools of water, and pour the water plentifully over them, I suppose to cool them." In some places they are fed at home with mulberry-leaves, which are squeezed up into balls and thrust into their mouths. Under these circumstances the sheep takes the position of a much valued and highly petted animal, and seems to be perfectly conscious of its consequence and importance, stamping and butting at all dogs that may approach the door of its owner, near which it is generally tied up.

The mutton is fat and well flavoured throughout the year, except for a few weeks in the spring, and the want is then supplied by excellent lamb. Rauwolff states that the sheep brought from the mountains to Jerusalem are allowed to feed for some time on the fragrant, delicate, and wholesome herbage which the neighbourhood affords, and that the mutton of that city has, in consequence, a peculiarly pleasant flavour. Among the Arabs, and (from them) in the towns, there is a way of preserving mutton by boiling and potting it in large earthen jars, covered up with its own tallow or dripping, which is poured in a boiling state upon the meat as it lies in the jar.

The consumption of animal food is not very considerable in Syria, or in any other Eastern country.<sup>a</sup> The present supply of sheep, including those of the inhabiting Arab tribes, is not by any means equal to even the limited demand,<sup>b</sup> and large numbers are therefore imported from Mesopotamia and the pashalic of Erzeroum. Epidemic diseases are very rare among the flocks of the Syrian Arabs; but the Kourid sheep, which came from Mesopotamia, are very subject to them. Burckhardt states that in 1810 not less than 10,000 of them died in a pasture-ground of Lebanon. The Arabs themselves make journeys into Northern Arabia (the Nejed) to buy up sheep (as well as camels) for the Syrian market. The journey is so timed that the flocks may arrive in Syria early in the spring, when they are immediately sold to the butchers of Damascus and of the Druse mountains, who kill them without delay, knowing by costly experience that the sheep left to fatten in Syria die suddenly about a month after their arrival.

It is among the Arab tribes that the condition of the sheep corresponds the most exactly with the Scriptural intimations. Being sources of great emolument to the nomades, they are highly valued by them. They give them titles of endearment, and the ram that is called out by

<sup>a</sup> We have obtained data for a small calculation on this subject which may interest the reader. More meat is consumed in towns than in villages, and in large towns than in small ones. Therefore, in taking Aleppo for the standard of consumption in Syria, the average is certainly not underrated but exceeded. The population is 60,000, and the same is the number of sheep reckoned to be annually consumed in that city—being one sheep annually to each person. Now in London, the sheep sold in Smithfield alone in 1838 was 1,403,400, which we may assume to be about the population of the district which Smithfield Market supplies. So far, there is one sheep by the year to the population of each city. But then the sale of sheep in Smithfield is an imperfect measure of the consumption of sheep, seeing that considerable numbers are sold to the butchers on their way to the market, and a large quantity of slaughtered meat is brought to other markets for sale from the country. Then the Aleppines eat scarcely any meat but mutton—no pork, very little beef, and scarcely any veal. But considering that the Londoners eat about as much beef as mutton, and adding thereto the large quantities of pork and veal which they consume, we may very moderately calculate that an inhabitant of London consumes about four times as much animal food as an inhabitant of Aleppo.

<sup>b</sup> We learn this from Dr. Bowring's "Report," which states that—"There are brought annually from Erzeroum and Mesopotamia about 80,000 sheep for the consumption of Syria, the greater part of which are sold at Hamah, Hama, Damascus, and in the South. The price varies according to the demand, from 65 to 80 piastres (13s. to 16s.) each—the average price is 70 piastres (14s.) each; making for 80,000 a total sum of 5,600,000 piastres (56,000l.); the sale is effected partly for cash and partly on credit. The returns for this amount are made mostly in specie, in new and old gazzis, which is a heavy drain on the capital of Syria: for the quantity furnished by Arabs and other pastoral populations for the consumption in Syria, there is an exchange of commodities which is mutually beneficial; but for the supplies received from Erzeroum and Mesopotamia, the balance of the trade is wholly discharged in gold. Ibrahim Pacha attempted to apply a remedy to this by increasing the number of sheep produced in Syria. He published an order that no lambs were to be killed for one or two years; for it had been the custom by the population to kill the lambs while very young. It is very doubtful whether the measure has done anything towards producing the effect desired. The supplies from Mesopotamia have not decreased, and the price of mutton in every part of Syria is from three to three and a half piastres per oke [about twopence-halfpenny per lb.]. So difficult is it by legislation, however despotic, to force production, and give direction to capital, independent of profit. To prohibit the killing of lambs was to increase the demand for them, and, consequently, to increase the evil it was intended to cure.

its master marches before the flock; hence the rulers of the people are everywhere called in Scripture, "leaders of the flock."<sup>a</sup> The Bedouins have certain names by which they call the sheep either to drink or to be milked; the sheep know the voice of the shepherd, and go at his bidding.<sup>b</sup> The sheep and goats are milked during the three spring months, in the morning and evening. They are sent out to pasture before sunrise while the lambs and kids remain in or near the camp. About ten o'clock the flock returns. The young are then allowed to satiate themselves, after which all the ewes belonging to one tent are tied to a long cord, and milked one after another. When an ewe is feeble in health, her milk is left wholly for the lamb. The same process occurs at sunset. From one hundred ewes or goats (the milk of which is usually mixed together) the Arabs expect in common years about eight pounds of butter per day, or about seven hundred pounds in the three spring months. An Arab family uses in the year about two quintals of butter; the rest is sold to the peasants and townspeople. The male lambs and kids are sold or slaughtered, except two or three which are kept for breeding. In years of scarcity both sheep and goats prove altogether barren.

The Arabs on the borders of Syria shear their sheep once a-year, near the end of spring. They usually sell the wool before the sheep are shorn, at so much for the wool of a hundred sheep. Habitually by the settled inhabitants, and by the Bedouins when they possess the convenience, the sheep are before the shearing collected into an open enclosure surrounded by a wall. The object of this is that the wool may be rendered finer by the sweating and evaporation. These are the *sheep-folds* mentioned in Scripture.<sup>c</sup> There are no others in Western Asia. Among the ancient Hebrews sheep-shearings were great festivals,<sup>d</sup> being to the sheep-master what the harvest was to the agriculturist. Sometimes a lamb is taken into the tent, and tended, and brought up like a dog.<sup>e</sup>

*Oxen*, except for agricultural labour, appear to be of much less importance in Syria now than they were in former times. For this reason we will in the first instance state what appears to be the Scriptural history of the ox,—chiefly following Jahn. Although chiefly employed in agriculture, oxen were not in old times,<sup>f</sup> as now, excluded from the possessions of the nomades. Herdmen were, however, deemed inferior to the keepers of flocks, but they possessed the richest pastures in Bashan, Sharon, and Achior. Hence the oxen and bulls of Bashan, which were not only well fed, but strong and ferocious, are used as the symbols of ferocious enemies.<sup>g</sup> The horns of oxen, bulls, and goats, were used metaphorically to express power.<sup>h</sup> If the horns are represented as made of brass or iron, they indicate great power;<sup>i</sup> hence ancient coins represent kings with horns. Oxen were not only employed in drawing carts and ploughs, but the nomades frequently made use of them for the purpose of carrying burdens as they did camels. Cheeses were made of the milk of cows;<sup>k</sup> the two cheeses mentioned in 1 Sam. xvii. 29, appear to have been slices of coagulated milk, which had been strained off, and, after what remained had grown hard, it was cut into pieces and put by for use.<sup>l</sup> Butter is much used by the nomades, as it was by the Hebrews until they

<sup>a</sup> Jer. xxv. 34, 35; Isa. xiv. 9; Zech. 3, &c.

<sup>b</sup> John x. 13, 14.

<sup>c</sup> Num. xxxii. 16, 24, 26; 2 Sam. vii. 8; Zeph. ii. 6.

<sup>d</sup> 1 Sam. xxv. 1. 4, 8; 3 Sam. xiii. 23.

<sup>e</sup> 2 Sam. xii. 3.

<sup>f</sup> Gen. xxiv. 25; Job i. 3.

<sup>g</sup> Ps. xxii. 12; lxviii. 30; Isa. xxxiv. 7; Deut. xxxii. 17; Prov. xiv. 17.

<sup>h</sup> Ps. lxxv. 10; lxxxix. 17, 24; xc. 9, 10; Jer. xlviii. 25; Lam. ii. 3; Ezek. xxix. 21; Dan. vii. 7, 8, 24; viii. 3-5; Amos vi. 13; Luke i. 69.

<sup>i</sup> 1 Kings xxii. 11; 2 Chron. xviii. 10; Mic. iv. 13.

<sup>k</sup> 2 Sam. xvii. 29.

<sup>l</sup> An account of the modes of preparing butter and cheese will be interesting to the reader. The following, therefore (chiefly from Burckhardt and Russell), is here introduced. The goat's or sheep's milk (for camel's milk is not used for the purpose, and the Bedouins have no cows) is put into a large copper pan, called *keder*, over a slow fire, and a little *leben*, or sour milk, or a small piece of the dried entrails of a young lamb thrown in with it. The milk then separates, and is put into the goat-skin called *saks*, which is tied to one of the tent-poles, and for one or two hours constantly moved backward and forward: the buttery substance then coagulates, the water is squeezed out, and the butter put into another skin, called *sakrasha*. If after two days they have collected a sufficient quantity of butter, they again put it over the fire, throw a quantity of *burgoul* [wheat boiled with some leaven, and dried in the sun], and leave it to boil, taking care to skim it. After having boiled for some time, the burgoul precipitates all the foreign substances, and the butter remains quite clear at the top of the *keder*. The buttermilk is once more drained through a bag of camel's hair, and whatever remains in it of a butter-like substance is left to dry in the sun, and thus eaten it is called *ouket*, or *khameid jobsheh*. The *burgoul*, cleared of the butter with which it is boiled, is called *kheldse*, and eaten by children. There are tribes in north-western Arabia which never eat bread, but live exclusively on dates, and food prepared from milk. Having taken off the butter, they heat the buttermilk again till it coagulates, and then dry it till it becomes quite hard; they then grind it, and each family collects in spring two or three loads of it. They eat it mixed with butter.

By the same processes the butter and cheese used in Syria are made. In fact, the towns derive their chief supply of those com-

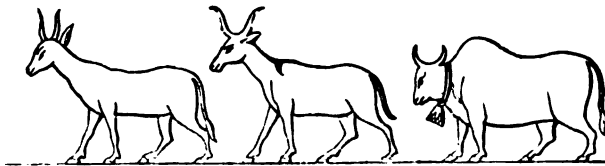
became settled in Palestine, when olive-oil supplied many of its uses. Milk and honey were accounted dainties by the Hebrews; but whenever these luxuries were in abundance, it proved that there had been previously a great destruction of the people; for owing to the depopulation the land was not depastured, and the bees, being less disturbed, were enabled to gather in a greater quantity of honey. This is elucidated in Isa. vii. 15, and following verses.

It is during winter that cow's milk is chiefly in use; and is not so much valued as that of goats, which is obtainable in Syria from the beginning of April to September. The cattle are but poorly fed, and the quality of the milk corresponds. At Aleppo, the animals being kept within doors at the gardens, the milk often tastes strongly of cabbage-leaves or garlic. It is probably the same in other Syrian towns.

In Syria there are two varieties of the ox. One of a large size, with a thin belly and long slender legs, like the figures of that animal often seen in antique intaglios. The other is somewhat smaller in bulk; the horns of both are short. There are but few black cattle to be seen near the towns, and they serve chiefly for the plough and water-wheels, for the beef is poor,

and very seldom eaten by any class of the inhabitants. The beef is in best condition at the end of harvest, and is then tolerably good. Veal is seldom brought to the markets, and is of even inferior quality to the beef.

The quality of the beef was no doubt better when more attention was paid to



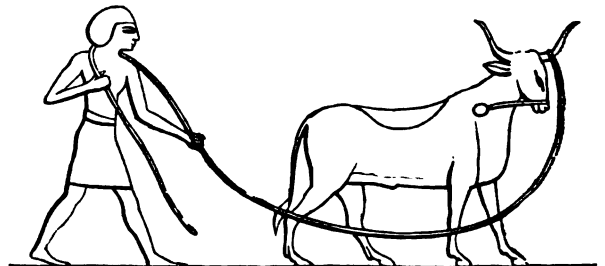
[Oxen from Egyptian Sculptures.]

the ox, as in the time of the Hebrews. The varieties represented in the Egyptian sculpture of those old times are three, and exhibit the principal distinctions of short-horned, long-horned, and one with the India hump. The two last do not now exist in Egypt, but are found in Abyssinia and Upper Ethiopia.

*Wild Oxen* are also exhibited in the Egyptian sculptures, and the chase of them is often represented. They were sometimes hunted with dogs by huntsmen furnished with bows, and sometimes they were caught with the noose or lasso, as was lately stated with reference to the gazelle. Wild Oxen are still found in the Syrian Desert.<sup>a</sup>

*Buffaloes* are in considerable numbers in Syria. Those which are found on the coast are larger and more spirited than those met with inland. On the

borders of Northern Palestine, even some of the Arab tribes keep large herds of buffaloes, chiefly, it would seem, with a view to the profit which may be made by the sale of their *leben*



[Wild Ox taken in Noose.]

modities from the nomade tribes. The butter is generally white, having the appearance and consistence of lard; and we cannot say it was much relished by us, or by other Englishmen who have eaten of it. The cheese, exhibited in round, thick cakes, is well enough when new; but, from the smallness of the cakes, it consolidates soon, and at last becomes intolerably hard: and as it hardens it acquires a degree of saltiness, which to ourselves (though fond of salt) seemed detestable. When made by the settled inhabitants of towns and villages, the chief difference is that cow's milk is also employed in the manufacture.

<sup>a</sup> "The Wild Cow, *baker of wahesh*, feeds on the herbs in the desert of the district of Djof, fifteen days' journey from Damascus. It was described to me as resembling in shape both the cow and large-sized deer; its neck like that of the cow, its legs thicker than the deer's, and its horns short."—*Berchardt*. Some of the Arabs make targets of its hide.

(sour milk) to the townspeople. It is a common saying and belief among the Turks, that all the animal kingdom was converted by Mohammed to the true faith, with the exception of the buffalo and boar, which remained unbelievers, and which on that account are often called "Christians." That the boar should have this character is no matter of surprise; but seeing that no objection to the flesh of the buffalo is entertained, while its *leben* is much esteemed by the Turks, it is difficult to account for the disgrace into which it has fallen, unless it be that the buffalo, like the hog, has a habit of rolling in the mud, and, in summer, of plunging into the muddy ponds up to the very nose, which alone remains visible above the surface.

## BIRDS.

The ornithology of Palestine will not require much of our notice. We possess little information beyond *the names* of many of the species found in that country. As it is useful to know the names of the inhabiting birds, we shall give them, interspersing such remarks on the more important species as the scanty information of travellers enables us to supply.

*The Aquiline Vulture*<sup>a</sup> although less common and familiar than in Egypt, and not as there frequenting the towns, is found in every part of Syria. It feeds on carrion, and is therefore of great use in clearing away offal and dead carcases. For this service the bird is respected, notwithstanding its unpleasant and savage aspect. Monro saw it disputing with a wolf the possession of a dead buffalo in the plain of Sharon. Most writers acquiesce in the conclusion of Bochart, that this bird is the 𐤀𐤏𐤃 *racham* of Scripture. The fact is, that this bird bears the same name among the Arabs, and we know of no other vulture in Palestine. It is, however, only mentioned in Scripture to be prohibited for food. Our public version renders the word by "the gier eagle."<sup>b</sup> The vultures are sometimes seen in flocks in Palestine, but more frequently solitary. They appear to abound most around the Lake of Tiberias, and in the plains of Philistia; the number even at any one time depends on circumstances. Wherever there is plenty of carrion, there are they.<sup>c</sup> Hasselquist seems to say that he saw a vulture of some other species near Cana in Galilee.

*Eagles* are rather frequently noticed by travellers in Palestine, not one of whom, however, names the species. There may be different species, but, from various slight intimations tiresome to recapitulate, as well as from the fact that it is found in *all* the countries bordering



[Vultur Percnopterus.]

<sup>a</sup> *Vultur percnopterus.*

<sup>b</sup> Lev. xi. 18; Deut. xiv. 17.

<sup>c</sup> See—Rauwolf, 128; Buckingham's Palestine, i. 189; Monro, ii. 88. 156; Liudsay, ii. 31; and various other travellers. Barchardt often, under the name of *Racham*.



[Eagle—*Aquila Helica*.]

Palestine, we conclude that the *Imperial Eagle* is the one chiefly intended.<sup>a</sup> Antelopes and large birds are said to be its chief prey; and it builds its nest upon the tops of the highest trees and steepest cliffs. In the Scriptures there are many very striking allusions to the eagle and its habits, which suffice to show how well it was known in Palestine and Edom.<sup>b</sup>

The *Osprey*,<sup>c</sup> or *Sea Eagle*, is not unknown in Syria;<sup>d</sup> and it is supposed by many to be the bird called *Peres* in Scripture, and the flesh of which is forbidden for food.<sup>e</sup>

The *Kite* is also common in Palestine, and there are seven species or varieties of hawk, of which we know only the specific distinctions of two, the *Falcon Gentil*,<sup>f</sup> and the *kestrel*.<sup>g</sup> Hasselquist saw the Arabs in Galilee riding "with fine dogs, and falcons," which, it appears, were of the former species: the other he met with in the mountains near Nazareth.

Of *Owls*, Syria possesses the *Great Owl*,<sup>h</sup> the *Common Barn Owl*,<sup>i</sup> and the *Little Owl*.<sup>k</sup>

The Crow family (*Corvidæ*) in Palestine is composed of the well-known birds, the *Raven*,<sup>l</sup> the common *Carrion Crow*,<sup>m</sup> the *Royston Crow*,<sup>n</sup> the *Jackdaw*<sup>o</sup> (of which Hasselquist noticed numbers in the oak woods near Galilee), and the *Magpie*.<sup>p</sup>

<sup>a</sup> This is one of the two eagles found in Egypt. It is the *Falco Mogolnik* of Linn., Lath., and Cuv., the *Aigle de Thobes* and *Aquila Helica* of Vieil. and Savig., the *Imperial Eagle* of Temminck, and the Russian eagle of Luthun.

<sup>b</sup> Job xxiv. 28.

<sup>c</sup> *Falco Ossifragus*.

<sup>d</sup> Rauwolf, 175; Russell, ii. 195.

<sup>e</sup> Lev. xi. 13; Dent. xiv. 12.

<sup>f</sup> *Falco Gentilis*.

<sup>g</sup> *Falco Tinnunculus*.—Dr. Russell has a long and valuable note respecting the hawks of Syria, which we think it right to introduce in this place.

"Seven different kinds or varieties of hawks, according to the natives, are employed by the sportsmen: but having never seen some of them, and being doubtful as to the specific names of others, I venture only to give the Arabic names in the following list, and mark the game for which such bird is appropriated. The list was drawn up by one of the most skilful falconers of Aleppo.

1. *Al Huz*, or *Barabas*. 2. *Al Saphy*. These two hawks are employed for antelope and hare hunting: the first also takes partridges, and the second bustards, herons, and other large birds. They are sold at Aleppo at the rate of fifty or sixty dollars each, to be sent to Baghdad.

3. *Al Shaheen*. 4. *Al Zygranus*. The first of these is the *Falcon Gentile*, and is employed for birds of all kinds, especially of the larger sort; the second for wild-geese, wild-ducks, and other aquatic game. There are two varieties of the *Zygranus*, of which the one called the *Indian*, is less fierce than the other.

5. *Al Dugran*. 6. *Al Jspeer*. The first is used for francolines and partridges; the other for partridges, and is brought from about Constantiople. It is rare at Aleppo, and costs between 300 and 400 dollars.

7. *Al Bashak*, whose game is quails and small birds of all kinds."

Russell goes on to state that the shaheen, unless taken from the nest, cannot be well trained. It is so fierce that it will fly at any game. Although not larger than a pigeon, large eagles are taken with this hawk. In former times it was taught to seize the eagle under the wing, and thus depriving him of the use of one wing, both birds fell to the ground together; but afterwards the mode was to teach the hawk to fix on the back between the wings, which has the same effect, only that, the bird falling more slowly, the falconer has more time to come to the assistance of his hawk; but in either case, if he be not very expeditious, the falcon is inevitably destroyed. This certainly is a most extraordinary instance of the well-known courage of the *Falcon Gentile*.

Dr. Patrick Russell, in his edition of his brother's work, adds—"I never saw the shaheen fly at eagles, that sport being disused in my time; but I have often seen him take storks and herons. The hawk when thrown off, flies for some time in a horizontal line not six feet from the ground; then mounting perpendicularly, with astonishing swiftness, he seizes his prey under the wing, and both together come tumbling to the ground. If the falconer be not expeditious, the game soon disengages itself."

<sup>h</sup> *Strix bubo*.

<sup>i</sup> *S. Jummer*.

<sup>k</sup> *S. passerina*.

<sup>l</sup> *Corvus corax*.

<sup>m</sup> *C. corvax*.

<sup>n</sup> *C. cornix*.

<sup>o</sup> *C. Monodula*.

<sup>p</sup> *C. pica*.

The *Common Roller*<sup>a</sup> is distinguished by the name of *Kawis Nidges* — “the beautiful impure,” which indicates the light in which it is regarded by the Moslems. The name is we believe founded on the observation that, although carrion is not their natural food, they will resort to it in the scarcity of their proper food which winter occasions. This has been affirmed by some naturalists, and denied by others. The beauty of the bird consists in its vivid plumage. It is also called *shikrak*.

The *Golden Oriole*,<sup>b</sup> and the *Cuckoo*,<sup>c</sup> are among the winter residents of Syria, to which they come in autumn, and depart in spring.

Early in April, Buckingham, travelling across the mountains from Damascus to Sidon, heard the voice of the cuckoo, loud, distinct, and clear, at the time the ground was covered with deep snow. The Arabs call it *Teer-el-Yakoo*, or Jacob's Bird, from supposing him to utter the name, the Arabic sound of which, indeed, the sound closely resembles.

[Osprey.—See p. ccccii.]



[Bee-Eater.]

That beautiful bird, the *Wry-neck*, appears and withdraws about the same time as the cuckoo. The timid *Greater Spotted Woodpecker*<sup>d</sup> inhabits the hollow trees. There are three species of the *Kingfisher*,<sup>e</sup> namely, the *Common Kingfisher*;<sup>f</sup> the *Halcyon*;<sup>g</sup> and the *Smyrna Kingfisher*. The *Bee-Eater*,<sup>h</sup> called in Arabic *Wurwar*, formerly not known in England, but now an occasional visitant, appears in Syria in the spring and remains till autumn. At their first appearance they are very lean, but soon become fat, and are then reckoned delicate eating. Hasselquist saw them in the groves and plains between Acre and Nazareth.

Volney reports that a species of *Humming-Bird* is found in Syria. M. J. B. Adanson met

<sup>a</sup> *Coracias garrula*.      <sup>b</sup> *Oriolus galbula*.      <sup>c</sup> *Cuculus canorus*.      <sup>d</sup> *Yanus torquilla*.  
<sup>e</sup> *Alcedo isipidia*. We are aware that this is not the common kingfisher, although very nearly so; but as our authority (Russell) gives both names, we must follow him, as we cannot know whether the bird be really the common species or really *A. isipidia*.  
<sup>f</sup> *Alcedo halcyon*.      <sup>g</sup> *Alcedo Smyrnaensis*.      <sup>h</sup> *Merops apiaster*.



[Hoopoe.]

with one in the territory of Sidon. “ Beautifully crested *Hoopoes*”<sup>a</sup> were seen by Buckingham at Jerash, early in March.

The ANATIDÆ, or birds of the Duck kind, which frequent the waters of Syria, are various and abundant. Few of them need more than to be named. The Swan;<sup>b</sup> the Goose<sup>c</sup>—wild and tame. Tame geese are not very commonly seen in Syria, or in any other part of Western Asia, as they are not in demand among the Moslems, who very rarely eat them. This is true also of the Duck, and equally so of *wild* water-fowl. Neither can we discover any trace that they were eaten by the ancient Hebrews, nor does any name which can be recognised as applicable to the goose or duck be recognised in the Scriptures. Not being named, they were not interdicted for food to the Hebrews, and the probability is that they were eaten, considering the extent to which they had seen them used for food in Egypt, where water-fowl, principally geese,

ducks, and quails, were caught in large quantities upon the waters, and formed a large article in the consumption of the people. The Egyptian goose was of a peculiar and very fine species, and is abundantly figured in all their monuments.

We proceed to the other species:—The *Common Duck* and *Mallard*.<sup>d</sup> Elliot describes the Lake of Tiberias as “ covered with wild-ducks ” when he was there. The *Shoveller*;<sup>e</sup> the *Sheldrake*;<sup>f</sup> the *Scaup Duck*;<sup>g</sup> the *Scoter* or *Black Diver*;<sup>h</sup> the *Wigeon*;<sup>i</sup> the *Teal*;<sup>k</sup> and the *Sirsæir Teal*<sup>l</sup> of Forskal. The *Pelican*<sup>m</sup> has been often noticed in Palestine of large size and in abundance. Rauwolff takes particular notice of them; and Buckingham, in the north of Syria, saw, floating silently down a stream, one of the largest pelicans he had ever beheld. On



[Shoveller.]

first perceiving it at a distance, its white body appeared like the swollen carcase of a sheep or other dead animal, and its broad bag and bill seemed like some large bird of prey regaling on it. It exhibited little alarm when quite near, but on being purposely roused

<sup>a</sup> *Upupa Epops.*

<sup>d</sup> *Anas boschas*, var. *a.* and *c.* Linn.

<sup>b</sup> *A. nigra.*

<sup>m</sup> *Pelicanus onocrotalus.*

<sup>b</sup> *Anas Cygnus.*

<sup>c</sup> *A. clypeata.*

<sup>i</sup> *A. penelope.*

<sup>c</sup> *A. Anser.*

<sup>f</sup> *A. tadorna.*

<sup>k</sup> *A. crecca.*

<sup>e</sup> *A. marila.*

<sup>l</sup> *A. sirsæir.*

to fly, it displayed a breadth of wing which appeared to be at least nine feet across. This bird is called by the Arabs *Jimmel-el-Bahar*, the River Camel: in the Scripture it is called קאא *kaath*, and is several times mentioned.<sup>a</sup> Rauwolf speaks of birds quite black with long necks, whereof he saw abundance in his travels in the Land of Promise, especially near Acre, among the rocks and crags of the sea. As well as he could judge from the distance, he thought them sea eagles (*Ossifragas*); but Ray objects that no eagles have long necks, and suspects that they were *Cormorants*.

The *Little Grebe*,<sup>b</sup> and the *Common Gull*,<sup>c</sup> are the only other birds of this class which our lists contain.

The GRALLE or WADING BIRDS are also numerous in Syria and Palestine, including a considerable proportion of species not known in England.



[Pelican.]



[Flamingo.]

The *Flamingo*<sup>d</sup> is rare, but is sometimes seen; and must from its size and colour reckon among the most conspicuous of the birds of whatever country it is found in. The *Spoon-bill*;<sup>e</sup> the common *Heron*,<sup>f</sup> which abounds in the Haouran; the *Stork*. The last-named bird is often mentioned in Scripture under the pleasant name of חסידיה *chasideh*, "pious," or "gracious," on account of its kindness to the parent birds and to the young. For this reason, as well as on account of the confidence it reposes in man by building its large nest, and intrusting its own conspicuous person, within his reach, by taking up its abode in towns and upon human habitations, this bird has been in all countries regarded with respect, and nowhere more than in Syria and Palestine. There is not the least doubt that the nest and its inmate figured as conspicuously upon the highest points in the towns and villages of ancient

<sup>a</sup> Lev. xi. 18; Deut. xiv. 17; Psalm cii. 7; Isa. xxxiv. 11; Zeph. ii. 14.  
<sup>d</sup> *Phaniapterus ruber*.                      <sup>e</sup> *Platylea leucorodia*.

<sup>b</sup> *Columbus auritus*.                      <sup>c</sup> *L. canus*.  
<sup>f</sup> *Ardea cinerea*.





[Stork.]

Canaan, as they do in the modern Palestine. Multitudes of these birds congregate on the borders of the Lake of Tiberias. There are two species in Syria, the White<sup>a</sup> and the Black Storks.<sup>b</sup>

Syria also possesses the *Numidian*<sup>c</sup> and the *Common Cranes*;<sup>d</sup> the *Little Bittern*;<sup>e</sup> *Curlew*;<sup>f</sup> *Woodcock*;<sup>g</sup> *Snipe*;<sup>h</sup> *Jack Snipe*;<sup>i</sup> *Grey Sand-piper*;<sup>k</sup> *Green Plover*;<sup>l</sup> *Stone Curlew*;<sup>m</sup> *Lapwing*;<sup>n</sup> *Coot*;<sup>o</sup> *Rail*;<sup>p</sup> *Water-Rail*;<sup>q</sup> *Bustard*;<sup>r</sup>—this last is of frequent occurrence. Its flesh is excellent, and it is taken with hawks and hunted with greyhounds. It runs exceedingly fast, but cannot perch, and rises on the wing with difficulty. The bird is not altogether unknown in England, and is the largest land-bird we possess. The other species in Syria is the *Arabian Bustard*<sup>s</sup> which is nearly as large as the other, but exhibits a considerably different plumage.

*Ostriches* are named several times in the Bible.<sup>t</sup> They still inhabit the great Syrian de-



[The Ostrich.]

<sup>a</sup> <i>Ardea ciconia.</i>	<sup>b</sup> <i>A. nigra.</i>	<sup>c</sup> <i>A. virgo.</i>	<sup>d</sup> <i>A. grus.</i>	<sup>e</sup> <i>A. minuta.</i>	<i>Scalopus arquata.</i>
<sup>f</sup> <i>S. rusticola.</i>	<sup>h</sup> <i>S. Gallinago.</i>	<sup>o</sup> <i>C. Oediceemus.</i>	<sup>i</sup> <i>S. Gallinula.</i>	<sup>k</sup> <i>Tringa squatarola.</i>	<sup>o</sup> <i>Fulica atra.</i>
<sup>l</sup> <i>Charadrius plumbeus.</i>	<sup>q</sup> <i>R. Aquaticus.</i>	<sup>r</sup> <i>Otis tarda.</i>	<sup>n</sup> <i>C. Spinorus.</i>	<sup>s</sup> <i>O. Arabs.</i>	
<sup>p</sup> <i>Rallus Crex.</i>					

<sup>t</sup> Lev. xi. 19; Deut. xiv. 15; Job xxx. 22; Isa. xlii. 21; xxxiv. 13; xliii. 20; Jer. i. 39; Lam. iv. 8; Mic. i. 6.

sert, especially the plains extending from the Haouran towards the Jebel Shammar and Nejed. Some are found in the Haouran; and a few are taken almost every year, even within two days' journey of Damascus. The bird breeds in the middle of winter, and lays from twelve to twenty-one eggs. The nest is generally made at the foot of some isolated hill. The eggs are placed close together in a circle, half buried in sand, to protect them from rain, and a narrow trench is dug round, whereby the water runs off. At ten or twelve feet from this circle the female places two or three other eggs, which she does not hatch, but leaves for the young ones to feed upon immediately after they are hatched. The parent birds sit on the eggs in turn; and while one is so employed, the other stands keeping watch on the summit of the adjacent hill, which circumstance enables the Arabs to kill them and to take their eggs. This is effected by stratagem; for the hunting of the ostrich is not practised in the Syrian or northern Arabian deserts. It is thus seen that the report that the sun alone hatches the ostrich's eggs is erroneous. For, besides the positive fact that the old birds sit on the nest, there is the consideration that the incubation takes place during the rainy season, and that the eggs are hatched in spring, before the sun gives forth any considerable degree of heat. The Arabs reckon the eggs delicious food, and sell them for about a shilling each. The townspeople hang up the shells as monuments in their rooms: ostrich feathers are sold at Aleppo and Damascus, principally at the latter city. The male has black feathers with white ends, except the tail feathers, which are wholly white: the feathers of the female are speckled with gray. The Sherarat Arabs often sell the whole skin with the feathers on it, producing at Damascus about ten Spanish dollars. The skin itself is thrown away as useless. At Aleppo, in the spring of 1811, the price of ostrich feathers was from about 2*l.* 10*s.* to 6*l.* The finest feathers are sold singly at from one to two shillings. The people of Aleppo sometimes bring home ostriches which they had killed at the distance of two or three days' journey eastward.

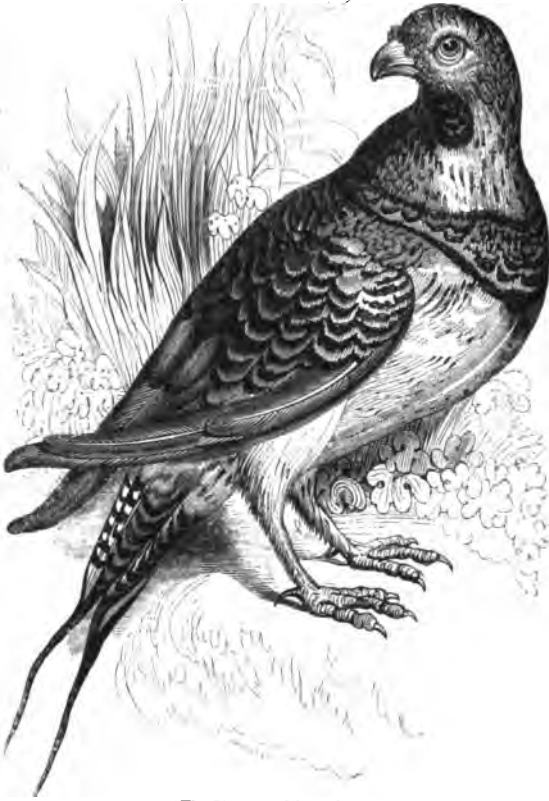
**GALLINÆ.** In this class we find the *Peacock*, the *Turkey*, the *Domestic Fowl*. The latter are good, plentiful, and cheap. Much larger quantities are consumed, in proportion to the population, than in any European country. Indeed, in this and other countries of Western Asia, the consumption of the common fowl greatly exceeds that of all other animal food excepting mutton.

Four species of *Tetrao* are very numerous in and around Palestine. These are the *Francoline*,<sup>a</sup> the *Katta*,<sup>b</sup> the *Red-Legged* or *Barbary Partridge*,<sup>c</sup> the *Greek Partridge*,<sup>d</sup> and the *Quail*.<sup>e</sup> All these may require some observations. The *Francoline* is a fine and handsome bird, about the size of the partridge, and feeding on seeds and insects. It frequents humid places and perches on trees. Its flesh is excellent, and is highly valued in some Asiatic countries; for the bird itself is found almost everywhere in Asia.

The *Katta* is one of the most common birds in and on the borders of Palestine. The stony districts of the country beyond Jordan swarm with them. They are so numerous in this quarter, that they actually appear like clouds in the distance. In fact, there is no place in which they are known to be equally abundant, not, certainly, in Arabia Petræa. Burckhardt notices them often. Near Boszra he says—"The quantity of *Kattas* here are beyond description; the whole plain seemed sometimes to rise: and far off in the air they were seen like large moving clouds." In the country east of the Dead Sea, and in the mountains of Edom, their numbers are the most excessive and incredible; and so dense are the flocks in which they fly that the Arab boys often kill two or three at a time merely by throwing a stick among them. According to Russell the bird is found at all seasons, but thus numerously chiefly in May and June, when, even in Northern Syria, a quantity sufficient to load an ass has sometimes been taken at one shutting of the clasp-net.

The Turks, among whom the more delicate kinds of wild fowl are not in much request, are remarkably fond of this bird; but by the Franks in Syria the flesh is considered black, hard, and dry, and the bird never appears at their tables. The *Katta* deposits upon the ground two or three eggs of a greenish black colour, and about the size of a pigeon's. The Arabs collect

<sup>a</sup> *Tetrao francolinus.*<sup>b</sup> *T. al chala.*<sup>c</sup> *T. petrosus.*<sup>d</sup> *T. saratilis.*<sup>e</sup> *T. coturnix.*

[The Katta. *Tetrax al Chata.*]

large quantities of them and eat them fried in butter. Burckhardt suggests the probability that this bird is the *Selav*, with which the Israelites were fed to satiety in the wilderness: Hasselquist was of the same opinion. It is undoubtedly his *Tetrao Israelitarum* which he first noticed in the deserts near the Dead Sea. All the circumstances evince that this and no other was the bird he had in view, although Linnæus, not knowing what is now known respecting the Katta, unfortunately deemed his account to refer to the common quail, although Hasselquist himself was careful to distinguish them, and gives a separate account of the latter bird. The locality of his bird is that inhabited by the Katta, which he could not fail to notice, and which must have been new to him, which the common European quail was not. After the information we have laid before the reader, he will be convinced that he has the Katta in view, when he writes —“I found the partridge of Arabia or the Holy Land, which has never been before described, and which I think is alone worth a journey (from Jerusalem) to the Dead Sea. These

birds are undoubtedly the *quails* of the Israelites.” In a letter to Linnæus himself, he again speaks of the same birds, and the same occasion, and says, “If natural history can give any information in the interpretation of the Bible, this bird is certainly the same with the quails of the Israelites; and they alone would deserve a journey to the Jordan. For my part, I was so pleased with this discovery that I forgot myself, and almost lost my life before I could get one into my possession.” He adds that about Whitsuntide the Arabs carry many thousands of them to Jerusalem for sale. This fact is true of the Katta, but not of the quail. It is a pity that information so positive should have been neglected; but it arose probably from his not giving the bird its native name of *Katta*, which would have indicated the distinction. The whole question as to the *Selav* of the Israelites certainly lies between this bird and the common quail, which is much less common in these quarters than the Katta. This bird is about the size of the partridge, with a fine plumage, which differs considerably in the different subjects.

The *Red-legged Partridge* is very common in Palestine. Monro shot one in the plains of Philistia, and says that in plumage it resembled the red-legged partridge of France, but was nearly twice the size, being little less than a hen-pheasant. “He adds, this is the *Tetrao rubricollis* of Linnæus;” but this we imagine is a mistake, as we know of no traveller who mentions the red-necked partridge as existing in Palestine. Burckhardt mentions the bird as a powerful runner. Monro shot another partridge in the neighbourhood of Jerusalem. It was perched upon a stone, and differed not in size from that he shot the day before, and the only variation in its plumage was observable on the breast, which was marked with regular black bars instead of chestnut-coloured spots, “but it is considered to be a different species by

Linnæus, and called *Tetrao saxatilis*." It is tiresome, in a sketch like the present, to argue points of nomenclature. We are therefore content to express our impression that the appropriation of names to these two species is very uncertain; but that the *Barbary*<sup>a</sup> and *Greek*<sup>b</sup> *Partridges* are probably their representatives: both are "*Red-legged*;" which may have occasioned some confusion in the appropriation of that term as a description.

There are some interesting allusions to partridges in Scripture. From one passage,<sup>c</sup> it is clear they were hunted by the Jews. The Arabs often get near enough to throw a destructive fire into a covey, by advancing under cover of an oblong piece of canvass, stretched over a couple of reeds or sticks, like a door. Also, observing that these birds become languid and fatigued after they have been hastily put up once or twice, they immediately run in upon them, and knock them down with their staves. This strikingly agrees with the mode of hunting to which the Scriptural allusion appears to refer. Tame partridges in cages are also employed to decoy into a net the coveys within hearing: and to this, also, there appears to be a reference in Eccles. xi. 30.<sup>d</sup>

The *Quail* has lately been mentioned, and an opinion expressed that either it or the *Katta* is to be regarded as the *Selav* of Scripture. It is not our office to examine the question here: nor perhaps can it ever be determined which of the two birds of such similar form and habits has the preferable claim. Both are migratory birds; and it is evident that the birds which fed the Israelites were in the act of migration. The Quails are plentiful in Syria in the spring: in the autumn they return, but not in such numbers as before. Hasselquist noticed them in Galilee. The bird is good eating; and large numbers were caught in nets by the ancient Egyptians, and consumed as food. In the same country they are still taken in the same manner and still eaten. Nothing is easier than to take these birds when they have recently arrived, exhausted by their aerial pilgrimage.

PASSERES.—Syria has an interesting collection of *Columbida*, of which the ascertained species are, the *Wood Pigeon*;<sup>e</sup> the *Common Dove*;<sup>f</sup> the *Cropper Dove*;<sup>g</sup> the *Jacobine Dove*;<sup>h</sup> the *Turbit Dove*;<sup>i</sup> the *Broad-tailed Shaker*;<sup>k</sup> the *Carrier Pigeon*;<sup>l</sup> the *Ring Dove*;<sup>m</sup> the *Turtle Dove*;<sup>n</sup> the *Indian Turtle*;<sup>o</sup> and the *C. Testaceo-incarnata* of Forskal.

Some of these require remark. And first, a few words of pigeons generally. The inhabitants of Syria and Palestine are fond of pigeons—like the Western Asiatics generally. Conspicuous dovecots are seen profusely in most of the villages, and vast flocks of wild doves appear about the time the corn begins to ripen, and remain till the harvest is over. In Scripture the allusions to doves and pigeons are so numerous as to evince that they were equally common, and equally valued in ancient times. In Egypt also now, as anciently, incredible numbers of these birds are kept; and in the villages the dwellings made for them are at the least as conspicuous as those which man builds for himself. The species thus domesticated is the *Columba Cenas seu Vinago*, and Sonnini makes the curious remark, that they alight every moment in the water, even in the most rapid part of the stream, and remain upon its surface often longer than half a minute. He thinks that this habit is probably owing to the great heat of the climate; and it is common to all the species.

The *Carrier Pigeon* has been from very ancient times employed throughout the East in conveying intelligence. Bochart has collected numerous authorities for the antiquity of this custom both in Syria and Greece; and much curious information on the subject may be found in Pennant,<sup>p</sup> and under circumstances analogous to those which the Scriptures intimate. Although

<sup>a</sup> *Tetrao pteropus*.<sup>b</sup> *T. saxatilis*.<sup>c</sup> 1 Sam. xxvi. 20.<sup>d</sup> See Shaw, part iii. chap. 3. sect. 10.<sup>e</sup> *Columba anas*, var. *a*.<sup>f</sup> *C. anas*, var. *c*.<sup>g</sup> *C. guttorosa*.<sup>h</sup> *C. cucullata*.<sup>i</sup> *C. turbita*.<sup>k</sup> *C. laticauda*.<sup>l</sup> *C. palumbus*.<sup>m</sup> *C. turur*.<sup>n</sup> *C. Risoria*.<sup>o</sup> Hieroz ii. 453, ed. Rosenmuller.

<sup>p</sup> British Zoology, 284. We are tempted to throw into a note Dr. Russell's statement on the subject:—"This pigeon, in former times, was employed by the English factory to convey intelligence from Scanderoon of the arrival of the Company's ships in that part. The name of the ship, the hour of her arrival, and whatever else could be comprised in a small compass, being written on a slip of paper, was secured in such a manner under the pigeon's wing as not to impede its flight; and her feet were bathed in vinegar, with a view to keep them cool, and prevent her being tempted by the sight of water to alight, by which the journey might have been prolonged, or the billet lost. The practice has been in disuse many years, but I have heard it asserted by an English gentleman, in whose time it still subsisted, that he had known the pigeons perform the journey in two hours and a half,

a denizen of the woods, the favoured condition of its existence among the Moslems encourages large numbers to establish themselves near the towns, and even to build their nests in the trees (surrounded by inhabited building) in the court-yards of the houses, where they exhibit as little timidity as the domestic pigeon with us. They are much admired and liked by all Orientals, and, to enjoy their constant presence, they are sometimes kept in cages, as they are with us for another reason—their rarity.

It has been doubted whether the common Turtle or the Collared Turtle is that which the sacred



[Collared Turtle. *Columba Risoria*.]

writers indicate as the *Turtle*, distinctively from the pigeon. The difficulty arises from the similarity in the form and habits of the two birds, and the consequent absence of identifying circumstances. Both are migratory; a characteristic applied to the turtle in Jer. iii. 7. We see that the country possesses both, and therefore *both* may be intended by the name. But if one is to be preferred we should incline to the collared turtle; for this bird is plentiful in all the countries of South-Western Asia, and in Egypt. Buckingham took notice of a wild pigeon beyond Jordan, the species of which we are unable from his slight notice to ascertain. He says—"The pigeons are nearly double the size of the common pigeon of Europe, and are nearly all distinguished by a fine rich blue plumage. They are held in such esteem as food, that the people of Soof, where I had first seen them, blind one of them as a decoy bird, by thrusting a needle into its eyes, and drawing a thread from one eye to the other, after which they are put

into trap-cages to allure others into the snare. It is said also that they were birds of passage, being known to go to Abyssinia in the end of spring, to stay there during the rainy season of that country, and to return again to these mountains to enjoy the winter rains here."

There are in Syria four species of the lark, namely—the *Sky-lark*,<sup>a</sup> the *Wood-lark*,<sup>b</sup> the *Tit-lark*,<sup>c</sup> the *Crested-lark*,<sup>d</sup> and the *Calandra-lark*<sup>e</sup>—all birds of fine song. There is also the *Starling*.<sup>f</sup>

In the *Thrush* genus the species are—the *Missel-thrush*,<sup>g</sup> the *Fieldfare*,<sup>h</sup> the *Song-thrush*,<sup>i</sup> the *Fox-coloured thrush*,<sup>k</sup> the *Blackbird*,<sup>l</sup> the *Ring-Ouzel*,<sup>m</sup> and the *Locust-Bird*.<sup>n</sup> The *Blackbird* was heard by Lord Lindsay in Edom. Monro in Galilee heard, for the first time since leaving England, "the joyous note of the blackbird." He adds that "his [natural] song is always monotonous and without melody;" but associations being imbibed by recollection [of educated birds] he was much enraptured by the sound.

The *Locust Bird* is about the size of the starling. The bill and legs are black; the plumage

The messenger had a young brood at Aleppo, and was sent down in an uncovered cage to Scanderoon, from whence, as soon as set at liberty, she returned with all expedition to her nest. It was usual at the season of the arrival of the annual ships to send pigeons to be ready at the port, and, by all accounts, if the bird remained absent above a fortnight, she was apt to forget her young, and therefore not fit to be trusted. Upon inquiring into the manner of training the pigeon for this service, I was told by some that she was at once sent down to Scanderoon in a cage; but I am rather inclined to believe what was affirmed by others, that she was taught by degrees to fly from shorter distances on the Scanderoon road.

"The Editor was informed that the pigeons, when let fly from Scanderoon, instead of bending their course towards the high mountains surrounding the plain, mounted at once directly up, soaring still almost perpendicularly until out of sight, as if to surmount at once the obstacles intercepting the view of their place of destination."

<sup>a</sup> *Alauda arvensis*.

<sup>b</sup> *A. arborea*.

<sup>c</sup> *A. pratensis*.

<sup>d</sup> *A. cristata*.

<sup>e</sup> *A. calandra*. This, the Wood-lark, is not in Russell's list. We introduce it on the authority of Monro, who heard it in Galilee. See his "Rambles," ii. 19.

<sup>f</sup> *Sturnus vulgaris*.

<sup>g</sup> *Turdus viscivorus*.

<sup>h</sup> *T. pilaris*.

<sup>i</sup> *T. cantor*.

<sup>k</sup> *T. rufus*.

<sup>l</sup> *T. merula*.

<sup>m</sup> *T. toquatus*.

<sup>n</sup> *T. roseus*.

of the body is of a flesh colour; that of the head, neck, and wings, black. The bird appears in Syria in June, about the time the white mulberries are ripe, and feeds chiefly on that fruit, when no locusts are to be found. Of this insect this bird is the most formidable enemy, and it makes its appearance about the time they may be expected. Other birds—starlings, sparrows, swallows, feast largely upon the locusts; but their operations seem slight, compared with the havoc committed by the *Smurmur*.<sup>a</sup> For this important service the bird is much respected, and its appearance hailed with gladness. There is a pretty fable that those places which are determined not to miss the services of the locust bird provide themselves with a supply of water from the country from which [not said where!] the bird comes; and that the birds scenting, in their flight, the water of their own dear land, are attracted in swarms to the neighbourhood.<sup>b</sup>

Of *Buntings*, Syria has the *Yellow Hammer* <sup>c</sup> and the *Ortolan*,<sup>d</sup> which might be mistaken for it. We are not aware that in Syria the *Ortolan* enjoys that reputation as a table delicacy which, in a fattened state, it has acquired in the south of Europe. There is also the *Black-faced Bunting*.<sup>e</sup>

These are all the more common *Finches*; namely:—

The *Chaffinch*,<sup>f</sup> the *Goldfinch*,<sup>g</sup> the *Red Linnet*,<sup>h</sup> the *Sparrow*.<sup>i</sup> This last impertinent cosmopolite is in prodigious numbers; sparrows swarm in the towns, and sometimes visit the houses, and build their nests about them to such an extent as to become a serious annoyance.

Of the multitudinous genus *Muscicapidæ* or *Fly-catchers*, only one species, the *Pied Fly-catcher*<sup>k</sup> has been particularly noticed in Syria.

Of the still more extensive genus of *Wagtails* or *Warblers*, Palestine offers an interesting collection; but none of them occur with much frequency. Most readers will remember that there is little allusion in Scripture to the singing of birds; and we used to think that the almost perfect silence of the Hebrew poets respecting the songs of birds, which supply so many beautiful allusions in the poetry of western nations, might be understood to imply that song-birds were scarce in Palestine. And this, now at least, proves to be the fact. There are a few favourite localities which the song-birds frequent, and where their sweet voices are heard. But, speaking generally, Paxton says:—"The singing of birds is not often heard in Palestine. There are a few species of birds, with a gaudy plumage, but their notes are not melodious. The sweet plaintive note of the nightingale is sometimes heard, but oftener the harsh cawing of the crow."

The *Nightingale*,<sup>l</sup> thus introduced to our notice, is heard during the greater part of the garden season, singing delightfully in the daytime from amid the pomegranate groves, and from trees of loftier growth in the night-season. In the larger towns there are persons who keep nightingales in cages, and let them out, at a small rate, to nocturnal assemblies; so that most entertainments of ceremony during the spring have a concert of nightingales. This might seem an incongruous employment of a bird so proverbially "mournful;" but those who know him will say he is—

"The merry nightingale  
That crowds, and hurries, and precipitates,  
With fast thick warble, his delicious notes,  
As he were fearful that an April night  
Would be too short for him to utter forth  
His love-chant, and disburthen his full soul  
Of all its music."—COLERIDGE.

After the nightingale comes the *Petty-Chaps*,<sup>m</sup> the *White Water-Wagtail*,<sup>n</sup> the *Win-Chat*,<sup>o</sup> the *Robin Redbreast*,<sup>p</sup> and the *Wren*.<sup>q</sup>

<sup>a</sup> The native name, framed like a large number of the Arabic names of birds, in imitation of the note or sound which the bird gives forth.

<sup>b</sup> "Mémoires des Missions," viii. 113.

<sup>c</sup> *E. quelea*.

<sup>d</sup> *E. domestica*.

<sup>e</sup> *M. alba*.

<sup>f</sup> *Fringilla coelebs*.

<sup>g</sup> *Muscicapa atricapilla*.

<sup>h</sup> *M. rubra*.

<sup>i</sup> *Emberiza hortulana*.

<sup>j</sup> *F. carduelis*.

<sup>k</sup> *Motacilla lusciniæ*.

<sup>l</sup> *M. rubicula*.

<sup>m</sup> *E. citrinella*.

<sup>n</sup> *R. linaria*.

<sup>o</sup> *M. ficedula*.

<sup>p</sup> *M. troglodytis*.

The *Common Martin*,<sup>a</sup> and the *Purple Martin*,<sup>b</sup> and the European<sup>c</sup> and American *Goat-suckers*,<sup>d</sup> complete the list of birds known to exist in Syria. But there is no doubt that others are there of which this list takes no cognisance; and, from the intimations of travellers, there would appear to be many not often seen in Europe.

### REPTILES.

*Turtles*, or *Sea Tortoises*, would seem to be plentiful along the coast, from the numbers that often strew the shore after a storm. Those that remain on the shore are, of course, such only as have been cast upon their backs; and they must perish, unless some good-natured persons set them upon their feet, which is often done. We cannot learn that they are eaten. Small turtles sometimes advance a considerable way up the rivers. *Fresh Water Tortoises* occur in the lakes, and even in some of the rivers. They are sometimes, but very rarely, eaten, and then only by Christians. This objection does not extend to the *Land Tortoise*, which is often found, and is esteemed more wholesome. Its eggs are used medicinally. They are of small size: we find no instance of one being found more than four or five pounds weight.

The marshy pools of Palestine and Syria abound in *Frogs*,<sup>e</sup> and they are of large size and excellent quality, but are not eaten by the natives of any class. There is also the *Tree Frog*;<sup>f</sup> and the *Toads* abound.

*Lizards* of different species are exceedingly abundant both in the settled country and in the deserts around Palestine. The species have not been well distinguished. In p. cxcii the reader will find some notice of alleged crocodiles in the river and lake near Cæsarea; and will find a suggestion that they were probably not *Crocodiles*, but some large member of the Lizard family. We now are even more inclined to this opinion, and have little doubt that the animal is the same as the *Nilotic Tupinambis*,<sup>h</sup> which is the largest of all the race. The Egyptians indeed pretend that the animal is produced from the eggs of the crocodile hatched in a dry place. The animal is more aquatic than any other Lizard, although much less so than the Crocodile. It attains a length of five or six feet, and is figured on the old monuments of Egypt. There is another species, the *Desert Tupinambis*,<sup>i</sup> which is frequent in the deserts bordering Egypt and Palestine. It differs chiefly from the other in its smaller size, and in the less aquatic adaptations of the tail. This is no doubt the Land Crocodile of Herodotus, and probably the true *Scincus* of the ancients. The Arabs call both species by the name of *Waran*, distinguishing the former as *Waran el-bahr*, the River Lizard, and the latter as *Waran el-houd*, the Land Lizard. Hence the names introduced by Merrem in his work on 'Reptiles,' and adopted by recent naturalists, of *Varanus dracænus* for the former, and *Varanus scincus* for the latter. The desert species differs much in habit from its aquatic congener. Instead of throwing itself with avidity upon the aliments presented to it, and exhibiting much irritation and desire to injure, as the latter does in captivity—the former, in bondage, altogether refuses food, and it is necessary to put the morsels into its mouth, and compel it to eat.

The *Scincus* of the ancients has been sought in other species. It has been usually identified with the *Lacerto Scincus* of Linnæus and Hasselquist. This species is extensively diffused in Africa, Arabia, and the warm deserts of southern Syria; and is celebrated in the East for the property of its body and tail, under various forms of preparation, of restoring exhausted vigour, on which account high prices have been given for it in those places where it is scarce. It is not impossible that this conceit, exploded in Europe and declining in Asia, originated in the very extraordinary vigour which the animal itself manifests in diving into the sands of the

<sup>a</sup> *Hirundo urtica.*

<sup>b</sup> *H. purpurea.*

<sup>c</sup> *Cuprimulgus Europæus.*

<sup>d</sup> *C. Americanus.* A specimen was shot at Aleppo in 1778; how far it may be common we know not.

<sup>e</sup> *Rana esculenta.*

<sup>f</sup> *R. arborea.*

<sup>g</sup> *R. buf.*

<sup>h</sup> *Tupinambis Nilotica*, Daud. and Geoff. St. Hilaire: the *Lacerta Nilotica* of Linnæus, Hasselquist, and Cuvier.

*Tupinambis arenarius.*

desert when it perceives occasion for alarm. This is perhaps the **מנ**, *coach*, rendered “chameleon” in Lev. xi. 32.

Notwithstanding the similarity of name this species is not to be confounded with the *Skinkore* of Shaw, which is an aquatic lizard, and differs little from the water efts, save in the extent and fashion of the fins. Shaw himself perhaps laboured under some misconception when he describes *this* creature as the animal to whose alleged aphrodisiac virtues we have alluded. But the natives have strange conceptions as to the medicinal properties of the various lizards, that it is not absolutely impossible that the same virtues might be ascribed to both the species.

The *Starry Lizard*<sup>a</sup> is that which appears to be the most common in Palestine, and particularly in Judea, where, Belon affirms, that it sometimes attains the size of a weasel. This is the lizard which infests the pyramids, and which, in Syria and in the other countries it inhabits, harbours in the crevices and between the stones of old walls, feeding on flies and other winged insects. This, we presume, is the species principally (but not exclusively) intended by Bruce when he says, “I am positive that I can say without exaggeration that the number I saw one day, in the great court of the temple of the sun at Baalbec, amounted to many thousands: the ground, the walls, the stones of the ruined buildings, were covered with



[Lizard.—*Lacerto Stelvio*.]

them; and the various colours of which they consisted made a very extraordinary appearance, glittering under the sun, in which they lay sleeping and basking.” In like manner, Lord Lindsay describes the ruins at Jerash as “absolutely alive with lizards.”

We cannot undertake to discriminate species in the desert on the strength of the very slight intimations of travellers. Near Suez, Lord Lindsay noticed “a species of grey lizard;” and on the ascent towards Mount Sinai, “hundreds of little lizards, of the colour of the sand, and called by the natives *Sarabandi*, were darting about.” And in the Syrian Desert, Major Skinner writes:—“The ground is teeming with lizards; the sun seems to draw them from the earth, for sometimes when I have fixed my eye upon one spot, I have fancied that the sands were getting into life; so many of these creatures at once crept from their holes.”

The small greyish-brown lizard called the *Turkish Lizard*,<sup>b</sup> we find named as one of the Syrian species. We could name several species which we suspect to be among those found in Palestine, but from this we refrain.

The *Chameleon* is, however, known to be one of the species which that country possesses. It is common enough in the gardens, as well as in the rocky hills. It is said to be usually of a green colour when found upon the grass, or of the colour of the earth on which it happens to rest; and if perched upon a branch or trunk of a tree, its colour is nearly that of the bark. The result of various observations made by Russell is that the animal frequently, but not always, goes through a succession of colours before assuming that of the body nearest to it; that its most permanent colour in a state of repose was that of the ground on which it lay, provided the ground was not of those colours which it never does assume, such as red or blue: and that the animal appears duller at some times than at others, and captivity seems to abate its alacrity

<sup>a</sup> *Lacerta stelvio*.

<sup>b</sup> *Lacerta turcica*.





[Chameleon.]

two large ones to fight, and could at any time, by knocking their tails against one another, ensure a combat, during which their change of colour was most conspicuous. This change is only effected by paroxysms of rage, when the dark green gall of the animal is transmitted into blood, and is visible enough under its pellucid skin. The gall, as it enters and leaves the circulation, affords the three various shades of green which are observable in its colour. The story of the *chameleon* assuming whatever colour is near it, is, like that of its living upon air—a fable. It is extremely voracious. I had one so tame that I could place it on a piece of stick, opposite a window, and in the course of ten minutes I have seen it devour half a dozen flies. Its mode of catching them is very singular; the tongue is a thin cartilaginous dart, anchor shaped: this it thrusts forth with great velocity, and never fails to catch its prey.

“The mechanism of the eye of the *chameleon* is extremely curious; it has the power of projecting the eye a considerable distance from the socket, and can make it revolve in all directions. One of them, which I kept for some months, deposited thirteen eggs in a corner of the room; each was about the size of a large coriander seed. The animal never sat on them. I took them away to try the effects of the sun, but from that period she declined daily in vivacity and soon after died.”

*Serpents.*—With respect to this class of animals our information is very deficient. We cannot find that a single species has been *named*, without a note of interrogation or some other intimation of doubt. We shall therefore merely state what we know, without attempting any very definite indications of species. One thing is clear, that there are no serpents of large size, and few of noxious qualities in Syria.

Few houses are free from snakes; but they are harmless, and no accidents are known to have been occasioned by them. They usually haunt the wood-house, or other offices, seldom appearing in the lodging apartments, although they are now and then heard rattling on the shelves among the ornamental china in the less frequented chambers, or detect themselves by diffusing a strong musky scent. They destroy mice, and small ones have sometimes been caught in mouse-traps, where, after gorging themselves upon the prisoner, they are unable to make their escape. We have ourselves noticed that in the midst of summer the house serpents are prone to resort to the places where the water-jars are kept—but more, we imagined, for coolness than for drink. This serpent is of a whitish grey colour, about two and a half feet in length, and is seldom found except in houses. In the absence of more determinate indications we will not hazard a conjecture as to the name of this species. Serpents of a more noxious kind are, in the hot months, found in the open country. But the ground being at that season bare and arid, they perceive objects at a distance, and withdrawing at the approach of man, they are little exposed to be trod upon, or to be otherwise provoked, and it is rare to hear of any injury inflicted by them. Russell declares that during his long residence in Syria he never had an opportunity of seeing a venomous serpent. Burckhardt mentions such

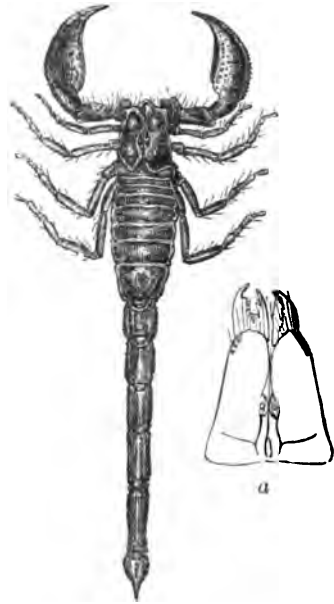
of changing. For which last conclusion we should be disposed to substitute the conjecture, that the wonder proved really less than it seemed, when the captivity of the animal offered the means of close examination. Dr. Madden, in whose observations we may place much reliance, states that he paid much attention to this animal when he was in Egypt. He had one that lived for three months, another two months, and several that he kept ten or fourteen days. He says:—“Of all the irascible little animals in the world, there are none so choleric as the *chameleon*. I trained

serpents as abundant in the desert south of Judea, and on the borders of the Elanitic Gulf—in short, in the land through which the Israelites passed when they journeyed from Mount Hor, by the way of the Red Sea, to compass the land of Edom, and in which they were, for their sins, afflicted by “serpents of burning bites.” As one of the localities is named *from the serpents*, Ras Om *Haye*, we may conjecture, with tolerable safety, that the species is the *Hai Coluber* of Linnæus, the cruel venom of whose bite has been well ascertained in Egypt, where it abounds; and which is there one of the principal of the serpents on which the serpent charmers exercise their mystic craft.

In the ‘Pictorial Bible,’ on Gen. xlix. 17, it is conjectured that the word שֵׁפִיפֹן *shephiphon*, rendered “adder” in our version [“Dan shall be a serpent by the way, *an adder in the path*”], meant the *Cerastes* or Horned Snake. This has since been remarkably confirmed by Addison (ii. 235), who, on the road to Palmyra, “killed on the path a *Cerastes*, or horned snake, the most venomous reptile of Syria.” This is also found in Arabia and Egypt.

Russell says that *Vipers* are not common in Syria, and that dried specimens, required for medicinal purposes, are brought from Egypt. He adds that broth made of the common house snake is sometimes eaten by Christians, but is never prescribed as a medicine.

*Scorpions* hold a principal place among the noxious animals which infest the houses. They are often found under or at the bottom of neglected boxes; and are met with in the summer nights crawling in the streets or on the stairs, and sometimes even among the mattresses spread on the terraces. The people are sometimes stung by them; but, although followed by considerable pain for several hours, the wound is not followed by serious consequences. Females suffer most from the bite, but not very seriously. The common remedy is oil, in which the bruised body of the animal has been steeped. This is, of course, a prejudice: plain oil would do quite as well. The sting is in the tail; hence a scorpion is usually seized by that part, and its head crushed by the foot.



[Scorpion.—a. Head and mandible.]

FISHES.

So little has been observed by travellers respecting the Fish on the shores and in the lakes and rivers of Palestine, and perhaps there has been so little to say, that we at first thought of dismissing the subject with this observation. It may, however, be best to set down such information as we do possess; as, however inconsiderable, it may be received as a contribution towards this branch of the natural history of Palestine. These are, however, so few, that it seems scarcely worth while to digest them in a scientific order. We will rather state the facts with reference to the localities with which they are connected.

*Mediterranean Fish.*—In connection with the fact that to the towns of Israel, and Jerusalem in particular, fish was brought for sale by the Phœnician fishermen,<sup>a</sup> it is interesting to learn that fish abound in the waters about Tyre and Sidon, and that they form a principal article in the fare of the inhabitants.<sup>b</sup> When Dr. Clarke was standing on the beach at Jaffa, an Arab fisherman ran to exhibit a fish he had just caught, with an animation which suggested that it could not be very common. It was like a small Tench, but of a

<sup>a</sup> Neh. xiii. 16.

<sup>b</sup> Buckingham's 'Arab Tribes,' 417.

bright emerald green colour, such as the Doctor never saw before or after, nor was it described by any author with which he was acquainted.<sup>a</sup> Wilde observed large numbers of *Flying Fish* off the coast near Jaffa.<sup>b</sup> *Red Mullet*, *Sturgeon* (rare), and two sorts of *Cod* have been noticed in the bay of Scanderoon, which abounds in fish: of these, one equals in quality the best English cod; the other, named *Leeche*, is much inferior.<sup>c</sup>

At *Tripoli* the sea abounds in fish and shell-fish. Burckhardt procured a list of the best from a French merchant. *Dorade*,<sup>d</sup> *Rouget*; *Loup*; *Severelle*; *Leeche* (the kind of cod just mentioned); *Malaye*; *Maire noire*; *Maire blanc*; *Vieille*. From our inability to find the synonymes of some of these, we infer that the names in these cases are merely local, and therefore apply to species less known than the others: as people seldom give new names to creatures whose names are known. These are caught with small baskets into which bait is put: the orifice is made, so that if the fish enters it cannot get out again. It is said that no other fish is found in the baskets. Oysters are found on some parts of the coast.<sup>e</sup>

The following are the names of Fishes assigned to the Mediterranean shore by the naturalists of the French expedition:—Three species of *Sargus*—namely, the *Hoarse Sargus*,<sup>f</sup> the *Common Sargus*,<sup>h</sup> and the *Ringed Sargus*; <sup>g</sup> the *Saw-fish*; <sup>k</sup> two species of *Perch*; <sup>l</sup> the *Brazen Serran*; <sup>m</sup> the *Salt-water Barbel*; <sup>n</sup> the *Sea-Camel*; <sup>o</sup> three species of the genus *Caranx*<sup>p</sup> in the Mackerel family; two species of real *Mackerel*; <sup>q</sup> and six species in the Linnæan genus of *Rays* (*raia*).<sup>r</sup>

*Red Sea Fish*.—It may be worth while to state what we know respecting the fish of the Gulf of Akaba. Burckhardt obtained from some fishermen some excellent fish, of a species resembling a *Turbot*, and very common there. Another fish, called *boury*, is caught in large quantities. On one occasion Burckhardt bought for fourpence-halfpenny thirty-two salted fish, each about two feet in length; and a measure of the dried shell fish called *zorombat*, which in this state the Arabs call *bussra*. For the smaller kinds of fish the fishermen employ hand-nets, which they throw into the sea from the shore. The large fish they slay with lances, cast from the shore, there being no boats or rafts on the western coast. Shoals of *Porpoises* have been noticed; and there is a large undescribed fish, the dried skin of which is an inch thick, and is employed by the Arabs, instead of leather, for their sandals. One evening the same traveller saw a great number of shell-fish leaving the water, and crawl to one hundred or two hundred paces inland, where they passed the night, and at sunrise returned to the sea.<sup>s</sup> At the head of this gulf, near Akaba, Lord Lindsay notes:—“Numbers of diminutive *Crabs* were running about on the sands; and little fish, and small *Sharks* in great numbers, sporting in the shallows.” To these we add the following, as being found in the Red Sea, on the authority of M. Geoffroy St. Hilaire,<sup>t</sup>—two species of *Serran*; <sup>u</sup> and the *Leaping Caranx*.<sup>v</sup>

The western coast of the gulf is not inhabited, and is only occasionally visited by fishermen, and by those who collect wood for charcoal, and the herb from which soda ashes are obtained. The former cure their fish on the spot (bay salt is abundant); and when they have collected a sufficient quantity of fish, they fetch a camel, and transport it to Tor or Suez. At the former place a camel's load of about four hundred pounds may be purchased for about three dollars. The fishermen also prepare a sort of lard, by cutting out the fat adhering to the fish, and melting it: they then mix it with salt, and preserve it in skins. They use it all the year round instead of butter, both in their cookery and for anointing their bodies. The taste is not disagreeable.

<sup>a</sup> Clarke, iv. 443.

<sup>b</sup> Wilde, ii. 433.

<sup>c</sup> Russell, ii. 218, 219.

<sup>d</sup> *Sparus aurata*—lunated gilt-head. This fish was much esteemed by the ancient Greeks and Romans. It sometimes weighs eight or ten pounds.

<sup>e</sup> Rauwolf, 262.

<sup>f</sup> 'Histoire Naturelle des Poissons de la Mer Rouge et de la Méditerranée.'

<sup>g</sup> *Sargus raucus*

<sup>h</sup> *S. vulgaris*.

<sup>i</sup> *S. annularis*.

<sup>k</sup> *Sciana aquila*.

<sup>l</sup> *Perca punctata* and *P. sinuosa*.

<sup>m</sup> *Serranus aeneus*.

<sup>n</sup> *Mullus barbatus*.

<sup>o</sup> So called by the Arabs—*jimel-ri-bahr*.—*Vomer Alexandrinus*.

<sup>p</sup> *Caranx lunus*; *C. rhonchus*; *C. fusus*.

<sup>q</sup> *Scomber quadripunctatus*; and *S. unicolor*.

<sup>r</sup> *Trygon grabatus*; *T. lymma*. *Myliobatis marginata*; *M. bovina*; *Raia virgata*; *Rhinobatus cemiculus*.

<sup>s</sup> Burckhardt, 517, 522, 524, 532, &c.

<sup>t</sup> Hi-t. Nat. des Pois-ons, &c., par M. G. St. Hilaire.

<sup>u</sup> *Serranus taurina*; and *S. melanurus*.

<sup>v</sup> *Caranx potaurista*; *Seriola speciosa* of Cuvier.

*Lake Tiberias* contains plenty of excellent fish, and it is obvious that fishing operations of extent and importance were carried on there in the time of Christ. This is abundantly intimated in the Gospels. But the case has long been far otherwise; and, until within these few years, there was scarcely a boat upon the lake, nor any fishing carried on but by angling from the shore. The northern part of the Lake abounds in fish, but Burckhardt did not notice any at the southern extremity. The most common species, named by him, are the *Binny*, which is a species of *Carp*;<sup>a</sup> and a fish called *Mesht*, which is a foot long, and five inches broad, with a flat body like the sole. Hasselquist examined some of the fish of this Lake, and thought it remarkable that the same kinds should be met with as in the Nile,—*Charmuth*, *Silurus*, *Binny* (as before), *Mulsil*, and *Sparus Galilæus*. “This,” says Dr. Clarke, “explains the observations of certain travellers, who speak of the Lake as possessing fishes peculiar to itself; not being perhaps acquainted with the produce of the Nile. Josephus considers the Lake Gennesareth as having fishes of a peculiar nature;<sup>b</sup> and yet it is very worthy of notice that in speaking of the fountain of Capernaum, his remarks tend to confirm the observation of Hasselquist: ‘Some consider it as a vein of the Nile, because it brings forth fishes resembling the *Coracinus* of the Alexandrian Lake.’”<sup>c</sup> Monro speaks with admiration of a fish from the Lake, on which (fried in oil) he feasted. It is called *Abou Sookn*, but no description is given.

Of the fishes in the *Lake Houle* we have no information. But the presence of valuable fish is indicated by the fact that its fisheries are rented of the government by some inhabitants of the town of Saphat.<sup>c</sup>

In the *Lake el Taka*, which communicates with the Orontes, there are vast numbers of fish, which resort there in winter from the river. It is principally of the species called by the Arabs the *Black Fish*, on account of its ash-coloured flesh: its length varies from five to eight feet. The fishing season is from November to January. The men fish during the night, with harpoons, in small boats which carry six or eight men; and so numerous are the fish, that by throwing their harpoons at random, they fill their boats in the course of the night. The fish are salted on the spot, and carried all over Syria and to Cyprus, for the use of the Christians during their long and rigid fasts. Besides the black fish, *Carp* are also taken with nets, and carried to Homs and Hamah, where the Turks are very fond of them.<sup>d</sup>

In a small lake near the castle of Mezereib, beyond Jordan, there is an abundance of fish, equal in size and not inferior in beauty to the gold and silver fishes, which are kept suspended from glass globes in England.<sup>e</sup> Burckhardt says,—“It abounds with fish, particularly *Carp* and a species called *Emshatt*.”

In the basin of a mosque at Tripoli are a number of fish, not suffered to be taken or eaten. Buckingham saw about two thousand within a circumference of less than one hundred paces. Some of them were large enough to weigh five or six pounds. They were flat-headed, and covered with scales of a silvery grey colour.<sup>f</sup>

It would appear that all the streams which flow from the east into the Jordan are full of fish, in general small, but of excellent flavour. In some of the streams they are most abundant. Burckhardt describes the Sheriat el Mandhour as “full of fish;” and in the Wady Wale, “innumerable fish were playing,” and he killed several of them merely by throwing stones.<sup>g</sup>

Dr. Russell has a chapter on the Fishes noticed at Aleppo; and as might be expected, the predominant genus seem to be the same as in the waters of Palestine, and it may therefore be conceived that the species do not differ. The small river Kowick might not be supposed very rich in fish; it nevertheless contains seventeen species, and among them some not previously described. Of the latter, one was called the *Aleppo Eel* by the Franks, from the resemblance of its shape to that of the Eel; but it is of a different genus, and being less oily

<sup>a</sup> Sonnius having established that the *Binny* of the Arabs is the *Lepidus* of the ancients, this fine and abundant species of carp is now known as *Cyprinus lepidotus* (i.e. the Scaly Carp). It is frequent in the Nile and in all the fresh waters of Syria.

<sup>b</sup> De Bell. Jud. iii. 18.

<sup>c</sup> Burckhardt, 16.

<sup>d</sup> Buckingham's 'Arab Tribes,' 167

<sup>e</sup> 'Syria,' 242.

<sup>f</sup> Buckingham's 'Arab Tribes,' 163.

<sup>g</sup> Burckhardt, 235, 273, 358, 370; Buckingham's 'Arab Tribes,' 148.

is esteemed lighter and more delicate food. They are very abundant, and oftener appear at the tables of the English at Aleppo than any other fish. The two other nondescripts were both of the genus *Silurus*,<sup>a</sup> and are seldom eaten, not being much esteemed.

Only two of the fishes of the river are eaten by Europeans,—one, the Aleppo Eel already mentioned; and the other the *Loche*,<sup>b</sup> which is excellent and abundant. There are also the *Binny*, the *Barbel*, and the *Chub*. The others are mostly of the genus *Cyprinus* (Carp), and of very indifferent quality, but are eaten by the Christians during Lent. Indeed, most of the fish is consumed by the native Christians, as the Moslems eat but little. An account of these *Cyprini*, some of which appear to be distinct varieties, may be seen in Russell's book.

The supply from the river is not equal to the demands of the native Christians. Fish are therefore brought to the Aleppo market from Scanderoon (as already noticed), from the Orontes and Euphrates, and from the lakes of Antioch and Taka. Among the fish brought thus to Aleppo are found the *Eel*;<sup>c</sup> the *Sheat Fish*;<sup>d</sup> the *Tania*;<sup>e</sup> the *Carp*;<sup>f</sup> and the *Barbel*.<sup>g</sup>

The market is also abundantly supplied, from the beginning of winter till March, with the "*Black Fish*"<sup>h</sup> which has already been noticed. It is a species of *Silurus*. Though it has a rank taste, and is deemed unwholesome by the doctors, large quantities are consumed by the native Christians.

Of MOLLUSCA, a species of *Cuttle Fish*,<sup>i</sup> of *Limax*<sup>k</sup> (snail), and of *Murex*,<sup>l</sup> are noticed as of common occurrence. The last is the marine animal which furnished the celebrated Tyrian dye. Mariti describes it, and suspected its identity with the shell-fish producing the celebrated purple of Tyre; and this conjecture has been confirmed by Wilde, who found a concrete mass of these shells in some of the ancient dye-pots of that city. A very curious and instructive memoir on the subject may be found as an appendix to the first volume of Wilde's 'Narrative.'

Of WORMS (*Vermes*) there is of course the *Earth-Worm*,<sup>m</sup> and two species of the *Leech*<sup>n</sup> are found in the waters. It is an accident not uncommon for the peasants, in drinking incautiously from the brook, to take a leech into the mouth, without perceiving it at the time, and which, fixing in the fauces, remains several days before they can find means to expel it. The same happens to animals. Captain Frankland nearly lost a fine dog by this means. The valuable medicinal use to which the blood-sucking propensities of the leech may be turned is not known in Syria.

Among Crustaceous animals, we have to mention the *Crab*. Lord Lindsay mentions a number of small crabs swarming the sands near Akaba; and Belon and Russell speak of a species<sup>o</sup> found in the rivers, and very different from any known in England, and by the Franks at Aleppo and elsewhere esteemed one of the greatest delicacies of their tables. It is of great service also to the Christians in their fast-days, being procurable at all times of the year. But it is in highest perfection at the season of white mulberries, when, straying from the river, it pampers itself with the ripe fruit scattered upon the ground under the trees. A sea-crab, called by Hasselquist the *Running-Crab*,<sup>p</sup> is mentioned by him as living on the coasts about Egypt and Syria. These animals come up from the sea about sunset, and run very fast along the sands in considerable numbers. The only other crustaceous animal of which we find any notice is a species of *Oniscus*.<sup>q</sup>

ARACHNIDES. The *Common Spider* often attains a much larger size than it ever exhibits in our northern clime. Hasselquist mentions "the Spider of Galilee"<sup>r</sup> which he found near the Fountain of Solomon in Galilee. Russell speaks of "a spider which emits a deleterious juice"<sup>s</sup> as being greatly dreaded by the people of Syria. Doubtless this is the same which

<sup>a</sup> *Silurus Pelusius* and *S. caust.*

<sup>d</sup> *Silurus glanis.*

<sup>e</sup> *C. niloticus*, says Russell; but we feel safe in saying *C. lepidotus*, which used formerly to be confounded with *C. niloticus*, from which it is now clearly distinct.

<sup>b</sup> *C. nasus.*

<sup>m</sup> *Lambricus terrestris.*

<sup>p</sup> *Cancer cursor.*

<sup>b</sup> *Cobitis barbatula.*

<sup>o</sup> *Cobitis tania.*

<sup>k</sup> *Limax agrestis.*

<sup>l</sup> *Hirudo medicinalis* and *H. sanguifuga.*

<sup>q</sup> *Oniscus asellus.*

<sup>c</sup> *Murana anguilla.*

<sup>f</sup> *Cyprinus carpio.*

<sup>l</sup> *Murex trunculus.*

<sup>o</sup> *Cancer fluviatilis.*

<sup>r</sup> *Aranea Gali. æs.*

Burckhardt had occasion to notice in Sinai. After his party had lighted the evening fire he was startled by hearing the cries of one of the Arabs "to take care of the venomous animal!" He then saw him kill a reptile like a spider, to which the Bedouins give the name of *Abou Hanakein*, or "the two-mouthed," *hana* meaning two-mouthed in their dialect. It was about four inches and a half in length, of which the body was three inches; it had five long legs on both sides, covered like the body with setæ of a light-yellow colour; the head long and pointed, with large black eyes; the mouth armed with two pair of fangs, one above the other, recurved, and extremely sharp. Burckhardt was informed that it never makes its appearance but at night, and is principally attracted by fire. The Bedouins entertain the greatest dread of it, and say that its bite, if not always mortal, produces a great swelling, almost instant vomiting, and excruciating pains. He takes it to be the *Galeode phalangiste*, from its exact resemblance to the figure of that animal given in Olivier's Travels.

There are two species of *Scolopendra* the wound inflicted by one of which,<sup>a</sup> is considered little less venomous than the sting of the scorpion; but the animal is seldom seen within doors.

### INSECTS.

In this large division of the animal kingdom, the following appear to be the only species whose existence in Palestine has been *ascertained*:—

Besides the *Common Beetle* there is the *Carob-tree Beetle*,<sup>b</sup> and the *Sacred Beetle*<sup>c</sup> of Egypt, which so often occurs in the hieroglyphic monuments of the Egyptians. A very entertaining account of their operations in forming the balls of clay and camel's dung in which the female deposits her eggs, may be found in Wilde's 'Narrative' (i. 367).

Next we come to the *Glow-worm*,<sup>d</sup> three species of *Cantharis* or Blistering Flies;<sup>e</sup> the *Staphylinus maxillosus*; the *Earwig*;<sup>f</sup> the *Religious Mantis*,<sup>g</sup> so called from the position in which it raises its anterior legs, or arms, which resembles that of supplication, on which account the Turks hold the insect in great respect. Five species of *Gryllus*,<sup>h</sup> or grasshopper, including the

*Locust (G. migratorius)*.—*Locusts* in Syria and Arabia are observed to come invariably from the East, and hence the popular tradition that they are produced by the waters of the Persian Gulf. Some few of them are seen every year, but great flights only in every fourth or fifth year. There are, however, exceptions to this rule. Syria is not equally with Arabia exposed to their ravages. The province of Nejed in particular is sometimes overwhelmed to such a degree, that, having destroyed the harvest, they penetrate by thousands into the private dwellings, and devour whatever they can find, even the leather of the water vessels. Those locusts which come in the first instance from the East are not considered so formidable, because they only fix upon trees, and do not destroy the grain. But they give birth to a new brood, and it is the young locusts, before they are sufficiently grown to fly away, which consume the crops. The locusts are said to breed three times in the year.

It was in the country east of the Dead Sea that Burckhardt first obtained a view of a swarm of locusts. They so completely covered the surface of the ground that his horse killed numbers of them at every step, while he had the greatest difficulty in keeping from his face those that rose up and flew about. Various passages of Scripture evince the extent of the ravages committed by these destructive insects in ancient times; and we have ample proof that such still occur, although with less regularity and frequency than in some other countries. "The devastations of the locust," says Dr. Bowring, in his Report, "are often a great detriment to the agriculturist: they sometimes cross the country, destroying everything before

<sup>a</sup> *Scolopendra morsitans*; the other is *S. coleoptrata*.

<sup>c</sup> *Scarabæus sacer*.

<sup>d</sup> *Lampyris noctiluca*.

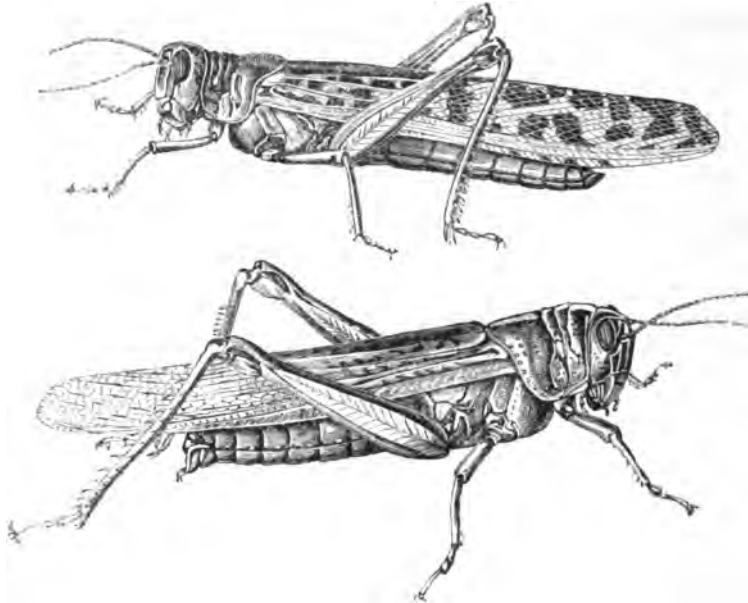
<sup>b</sup> *Scarabæus ceratonia*.

<sup>e</sup> Namely, the Common Spanish Fly (*M. loe vesicatorius*); the Syrian (*M. Syriacus*); and the succory species (*M. chioiri*); this last is described by Hasselquist as "the Blistering Fly of the ancients, which lives and feeds on the flowers of succory."

<sup>f</sup> *Forficula auricularia*.

<sup>g</sup> *Mantis religiosa*.

<sup>h</sup> *Gryllus domesticus*; *G. nasutus*; *G. gryllo-taipa*; *G. migratorius*; *G. falcatus*.



[Locust.]

them. A few years ago the army of Ibrahim Pasha, in the attempt to extirpate them,<sup>a</sup> gathered up no less than 65,000 *ardebs*.<sup>b</sup> No one can estimate the damage caused by these creatures; when they are grown to a certain size, it is impossible to conquer or resist them; they come like flights of birds, darkening the air, and the destruction of hundreds of thousands seems in no respect to diminish their numbers."

Locusts are eaten by the Bedouins they collect: them in great numbers in the beginning of April, when the sexes cohabit, and when they are easily caught. After having been roasted a little upon the iron-plate on which bread is baked, they are dried in the sun, and then put into large sacks, with the mixture of a little salt. Another way is to throw them alive into boiling water, in which a good deal of salt has been mixed; after a few minutes they are taken out and dried in the sun; the heads, feet, and wings are then torn off, the bodies are cleansed from the salt and perfectly dried, after which they are stowed away in sacks. They are never served up as a dish, but every one takes a handful of them when hungry. They are sometimes eaten broiled in butter; and they often contribute materials for a breakfast when spread over unleavened bread mixed with butter. In some parts, after being dried, the Arabs grind them to a powder, of which a kind of bread is made in small cakes. It may be worthy of remark, that of all Bedouins known by Burckhardt, those of Sinai alone abstain from using locusts as an article of food. In the towns of Arabia there are shops in which locusts are sold by measure. They are not eaten by the peasants of Syria; although some poor fellahs in the Haouran will make a meal of them when pressed by hunger. They break off the heads and take out the entrails before drying them in the sun, whereas most of the Bedouins swallow them entire.

That natural enemy of the locusts, the *Smurmur*, or Locust Bird, has already been noticed. It is of the size of a swallow, and devours vast numbers of them; and it is even said that they take flight at its cry. But, as Burckhardt remarks, "If the whole feathered tribe of the district visited by locusts were to unite their efforts, it would avail little, so immense are the numbers of these dreadful insects."

<sup>a</sup> Those that had been bred in the country, and before they could fly, we presume. Those that come from the East are called "Flying Locusts," while those bred in the country from them are called "Devouring Locusts;" the reason of this distinction has already been stated.

<sup>b</sup> Each equal to five English bushels, and therefore the whole equal to 325,000 bushels.

Russell's list contains the word "*Cicada*," but the species is not indicated. The Arabic synonyme (*ferfer*), which he introduces, denotes the *Cricket*. In the larger stagnant waters the singular movements of one of the *Water Scorpions*<sup>a</sup> may be observed. There are very few houses in Syria in which the *Red-Bug*<sup>b</sup> is not found; and where the divan cushions or mattresses happen to be stuffed with wool instead of cotton, they are always to be found in vast numbers. Hasselquist reports that in the Mount of Temptation he found "a very curious and new species of *Cimeæ* or Bug;" but he gives no further information about it. *Silkworms*<sup>c</sup> have been slightly noticed in the preceding chapter. Monro acquaints us with the rather remarkable fact that, as soon as the eggs are laid in the plains under Lebanon, they are sent away to Canobin or other places in the higher and colder region, where they can be kept cool without danger of hatching, until the mulberry-buds are ready for them in the spring. More information respecting the treatment of silk-worms may be found in Hasselquist (234). The *Almond-Moth*<sup>d</sup> and the *Fig-tree Moth*<sup>e</sup> are also mentioned by Hasselquist; and Russell says, "There are some beautiful varieties of the moth tribe. At the gardens (at Aleppo) in spring they afford amusement after supper, visiting in endless succession, and displaying their finery to advantage in the Venetian Finars, used in protecting the candles from the wind."

The *Lion Ant*<sup>f</sup> forms its funnel-shaped trap in the sands of Syria. Hasselquist indicates a species of *Tenthredo*, which he surnamed *sodomitica* because he found it "in the mad apples near Mount Tabor and the Dead Sea."

There are two species of *Wasps*,<sup>h</sup> and two of *Bees*.<sup>i</sup>—To those who remember the Scriptural descriptions of Palestine as "a land flowing with milk and honey," it will be interesting to know that in many parts of the country bees are still numerous, and are reared with great success. Thus Hasselquist describes the inhabitants of *Sepphoris* as breeding a great number of bees, to their considerable advantage, and with very little trouble. They make their beehives of clay, four feet long and half a foot in diameter, as in Egypt. Ten or twelve of these are placed on the bare ground without anything under them, but they are covered by a roof, which gives them much of the appearance of dog-kennels. In those in which the bees are at work the opening is closed up, leaving only small apertures through which the bees may pass in and out. The bee is held in some veneration by the Moslems, and is spoken of in the Koran as "a sign unto the people that understand." Ants<sup>k</sup> are exceedingly numerous. At Bethlehem, Turner writes that he saw "a great number of small *Red Ants*, and of *Black Caterpillars*, about four inches long, with innumerable feet along the whole length of their body."

*Fleas* cannot by any means be excluded from the neatest houses and the most cleanly persons. The long eastern habit, affording shelter to them, is a favourite conveyance, and the streets and dusty bazaars so swarm with them that it is impossible to walk about without collecting a colony. People of condition sometimes, for this reason, change their dress on their return home; but persons in humbler circumstances, who cannot use this precaution, are tormented to an extent which might be beyond any powers of endurance but those which habit gives. The fleas are particularly partial to the rich juices of Europeans fresh from the West, and their presence never fails to prove a great attraction to their countless hosts. Fleas make their appearance in the spring, and riot without stint until the hot weather sets in, when they lose their wonted agility, and their numbers gradually diminish. It is a popular saying in Palestine that "The King of the Fleas holds his court in Tiberias." It may be so; but there are other places which might safely compete the distinction with that town. *Lice* are almost equally abundant. There are perhaps few persons, excepting in the very highest ranks, entirely free from them, probably because the state of exemption could only be preserved by a degree of constant and sedulous attention which is not found convenient. Europeans can keep themselves free when they are at home; but during a journey, the most fastidious traveller finds that he has no alternative but to abandon himself to this infliction.

<sup>a</sup> *Nepa linearis*.

<sup>d</sup> *Phalæna amygdali fructus*.

<sup>e</sup> *Vespa crabro*; *V. vulgaris*.

<sup>b</sup> *Cimen lectularius*.

<sup>c</sup> *P. ficus*.

<sup>h</sup> *Apis lmgicornis*; *A. mellifica*.

<sup>c</sup> *Phalæna mori*.

<sup>f</sup> *Myrmæleon formica leo*.

<sup>i</sup> *Formica rufa*.



When the flea, on the increase of the heat, relinquishes the office of torturing the Syrians, their duty is taken up with alacrity by the *Mosquitos*, whose reign lasts throughout the summer, and are particularly annoying at night. But the inhabitants seldom use mosquito nets or curtains, but are content with the very inadequate protection of a handkerchief thrown over the face.

The *Common Flies* are very troublesome at meal times, but at other times it is easy to elude them by darkening the room. In the garden-houses, towards the end of spring, they become intolerably vexatious, and at dinner in the open divans they rush to the assault in such swarms that servants are obliged to stand around with green branches in their hands, to protect the table. On a journey, both the mosquitoes and common flies are exceedingly annoying in the heat of the day, which is one reason why travelling by night is preferred during summer. The manner in which the khans and villages are infested by fleas, also affords one powerful inducement to the very common travelling practice of resting in the open air, or in tents.



[Gazelles and Hares.]

END OF THE PHYSICAL HISTORY.

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TO THE

## PHYSICAL HISTORY OF PALESTINE.

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