fruit, if not equal to its Smyrna congener, is still good; the Indian fig, a species of cactus, valued also for its fruit, and which forms pretty and effective hedges; the pistachio, abundant and very productive; the orange and lemon, also very plentiful, and the former, especially in the Delta, producing excellent fruit; two varieties of the pomegranate, the fruit of one of which is deliciously sweet, and that of the other slightly bitter; the guava, as productive here as in its natural tropics; the vine, not a great success, and chiefly cultivated for its raisins, of which one variety equals the best Turkish *sultanas;* the walnut, excellent for the quality of its wood, but not producing much or good fruit, a remark that applies also to the cherry-tree; and finally, the almond, the pear, the peach, and the apple, which, if not equal to the best varieties of their European namesakes, contribute their fairly good quotas to the abundant fruit-crops of the country.

CHAPTER XVII.

CLIMATE.

Generally, Dry and Hot—Considerable Difference between Coast and Interior—No Real Winter in Egypt—The *Khamsin*—Mean Summer Temperature at Cairo—Scarcity of Rain—Climate of the Isthmus—Mean Annual Rates of Temperature—Regularity of the Wind—Egyptian and European Death-rates—The Nile Valley anciently Famous as a Sanitarium—Testimony of Rev. A. C. Smith—Corroborated by Drs. Dalrymple, Patterson, Walker, Zagiel, and Pruner—Endemic Diseases—Improving Sanitary Administration—Consensus of Medical Opinion in Favour of Egypt as a Health-resort.

THE acknowledged value of Egypt as a health-resort suggests some notice of its climatic peculiarities, which, although less markedly, have still in common with many other features of the country undergone some sensible changes within recent years.

Subject to considerable local qualifications, the climate of Egypt may be generally described as hot and dry. The description applies least perfectly to the lower Delta, the situation of which, along the sea, greatly tempers the elsewhere general heat, and at the same time gives to its atmosphere a degree of moisture which is unknown in the Middle and Upper provinces.* Thus in Alexandria, where there is an abundant rainfall between October and February, the thermometer seldom ranges above the average of Southern Europe, and even in the dog-days keeps fairly down to "temperate." In Cairo and throughout Middle Egypt, the rain diminishes to slight showers on eight or ten days a year, and the mean temperature of the twelvemonth is nearly 3° higher than along the coast; while in Upper Egypt rain is an almost unknown phe-

* According to Dr. Pruner, the moisture of Alexandria is *one hundred and fifty-two* times that of Cairo.

nomenon, and the heat, which during the summer months is intense, never cools below a point that excludes winter from the list of Egyptian seasons altogether. In Alexandria, and more rarely in Cairo, European residents sometimes light a fire during December and January; but in neither city is there, in our Western sense, properly any winter at all. Spring, summer, and autumn are, in fact, the only seasons known to the whole land of Egypt.

The first of these begins in February, when the fruit-trees blossom and the atmosphere gradually acquires a delightful warmth. It is, however, during this otherwise charming season that occurs the hot *khamsin** wind whose distinctive effects have gained for it a bad renown among atmospheric phenomena. This wind, or rather series of winds, which the Arabs also call *simoom*, blows intermittently from the end of March till the middle or third week of May. It comes from the far south, or more exactly SSE., and after traversing the burning sands of Africa at a time when the sun's rays fall almost perpendicularly, it reaches Egypt laden with all the noxious vapours of the desert. On its approach, the sky, normally so blue and cloudless, becomes black and heavy, the sun darkens into a dim violet-coloured disc, and what is at first but a light warm breeze rapidly increases into a blast hot and dry as from an oven, which shrivels up every green thing, warps and cracks wood, renders breathing difficult, and is generally hurtful to both vegetable and animal life. Happily this pernicious sirocco lasts only from twenty-four

* So called from the *fifty* or more days during which it blows at frequent intervals. The name *simoom* (poison) is more especially given to its hottest blasts, which seldom last more than a quarter of an hour or twenty minutes. A very vivid description of this latter will be found in the first chapter of Mr. Palgrave's *Central and Eastern Arabia*. In Egypt, however, these hot winds have within recent years been much less frequent, and their action less severe than formerly.

to forty-eight hours at a time, during which all out-door work is suspended and the inhabitants confine themselves to their houses, and vainly endeavour to shut out the fine unpalpable dust that fills the air, and, according to the Arab saying, is so penetrating that it will enter even an egg through the pores of its shell. These are the winds which in the unsheltered desert have so often proved fatal to whole caravans, and more than once to entire armies. They are not however peculiar to Egypt, but blowing from different points occur also in other parts of Africa, in the Syrian desert, the Arabian peninsula, Babylonia, Persia, and southern India. It is at the same time remarkable that this southerly breeze, so perniciously hot in spring, is during the winter months the sharpest and coldest that blows—the reason being that in December and January the solar rays fall more obliquely on the desert, and the wave of air which then descends on Egypt is chilled by its passage over the snowy highlands of Abyssinia.

Hardly has the last hot breath of the *khamsin* swept away northwards towards Constantinople—which it reaches tempered by the Mediterranean, but still most unhealthily warm—than the Egyptian spring at once ripens into summer. In Upper Egypt the heat then becomes trying even to the natives, and almost unbearable by Europeans. Lady Duff Gordon, however, testifies that even as far south as Thebes, by taking proper precautions and excluding light and air during the hottest hours of the day, as is the universal rule in all tropical latitudes, she suffered no inconvenience from the heat. At Cairo, the mean summer temperature is about 92° Fahr., but it sometimes, though rarely, ranges ten and even twelve degrees higher. But this latter extremity of heat is seldom experienced except in the more confined

districts of the Saïd, which suffer also from the absence of the heavy dews that nocturnally irrigate the parched surface of the Delta and Middle Egypt. The northerly summer breezes waft in the evaporations of the Mediterranean, and these, suspended in the atmosphere during the day, are deposited at night in an abundant dew that moistens and cools the air, and in the morning again evaporates in light flaky clouds.

The summer may be said to last till the last week of September, when even in the Upper Valley the heat ceases to be inconvenient, and the long genial autumn, which extends throughout our European winter, begins. For the first five or six weeks of it, light easterly winds prevail, which render the continuing warmth damp and muggy, and make this the most unhealthy period of the Egyptian year. But thence on till February the climate is everywhere delightfully mild, and in Upper Egypt balmy beyond anything known elsewhere in northern latitudes. In the Delta, as has been mentioned, it rains frequently and heavily during these months, but the mean general temperature of the season is only 12° or 15° below our English summer heat, and the air is everywhere dry and invigorating except in immediate proximity to the sea. It might have been expected that the great number of trees planted by Mehemet Ali, and the constantly extending area of the canals, would have largely increased the rainfall inland, but a comparison of the meteorological observations taken during the French Expedition with those more recently made shows that there has been no sensible augmentation. Thus, between 1798 and 1800 inclusive, the number of days on which rain fell averaged fifteen; while between 1835 and 1839 the average was twelve, during which time the actual fall was reduced from 0.69 inches in 1835, and 0.38 inches is 1836, to

0.60 inches, 0.44 inches, and 0.12 inches in 1839. In 1871 the number of rainy days in Cairo was nine, during which it actually rained only 9 hours 8 minutes. At Alexandria the mean for the three years 1847–8–9 was 7.50 in. against 8.92 in. for 1867, 13.18 in. for 1868, 6.22 in. for 1869, 2.86 in. for 1870, 6.61 for 1871, and 11.14 in. for 1872. In the Isthmus of Suez, however, the climate has been sensibly modified by the opening of the Canal and the extension of cultivation along it, the summer being now cooler and the winter warmer than even ten years ago.* This improvement in the temperature of the Isthmus is attributed to the infiltration of water into the less elevated parts of the desert, but it is also no doubt largely owing to the vegetation which has sprung up along the banks of the Canal, and over the broad belt of reclaimed land which is now irrigated by the fresh-water canal.

The nearly constant regularity of the temperature is shown by a comparison of recorded observations extending, at intervals, over more than a century. Thus, an analysis of Niebuhr's observations from November, 1761, to August, 1762, gives the following mean rates for those ten months:

	Deg.	F.
1761—November	67	78
December	58	16
1762—January	56	21
February	58	0
March	66	61
April	69	61
May	77	6
June	79	77
July	85	82
August	88	42

* During the first years of the work on the Canal, before the water was admitted, the mercury twice fell below zero, a degree of cold which has not occurred since.

A similar analysis of the record kept at Cairo by the scientific staff of the French Expedition (as given by Clot Bey in centigrade degrees) shows the following for 1799:—

	Deg. C.
January	13 3
February	14 0
March	17 5
April	22 2
May	24 3
June	28 6
July	30 2
August	29 0
September	28 3
October	22 7
November	18 8
December	16 2

Nearly forty years later the observations of M. Destrouches, a medical officer in the service of the Viceroy, gave the following annual means for the five years 1835–9, also in centigrade degrees:—

	Deg. C.		Deg. C.
1835	22 4	1838	22 4
1836	22 0	1839	22 1
1837	23 0		

or a mean for the whole five years of about 22° 4′ C., equal to 70° Fahrenheit, which, it will be seen, corresponds closely with the result of the register kept at H.M. Consulate, Cairo, during 1870–71–72, when the following monthly averages for the three years were recorded:—

	Deg. F.
January	... 54
February	... 54
March	... 63
April	... 68
May	... 80

	Deg. F.
June	... 84
July	... 85
August	... 86
September	... 82
October	... 73
November	... 66
December	... 59

or a mean temperature throughout the period of about 71° Fahr. A similar register kept at the Alexandria Consulate during 1873 gives an average of 69½° for the year.

While these figures may be taken to represent the average daily heat throughout Middle Egypt—itself nearly a mean of the whole country—the night temperature is from 8° to 12° lower, the fall rapidly following sunset and continuing till sunrise. Hygrometrically, the four months of December, January, February, and March, over which Nile tours generally extend, compare with our English summer months of June, July, and August as about 56 to 81; and, generally, the humidity of the atmosphere varies with the winds, being greatest when the wind is N. to NE., less when it is NW. to E., and least of all when S. to SW. It need hardly be said that frost and snow are almost unknown. Hailstorms, descending from the Syrian hills and sweeping across Palestine, sometimes reach the Egyptian frontier, and Consul Stanley reports having seen thin ice on the pools near Suez, but these are rare incidents which happen only once or twice in a century.

Like nearly all physical phenomena in Egypt, the course of the wind, so variable in our climate, is there almost strictly periodical. In point both of force and duration, the northerly breezes predominate, blowing nearly nine months out of the twelve.* They continue with

* And thence anciently called "Etesian."