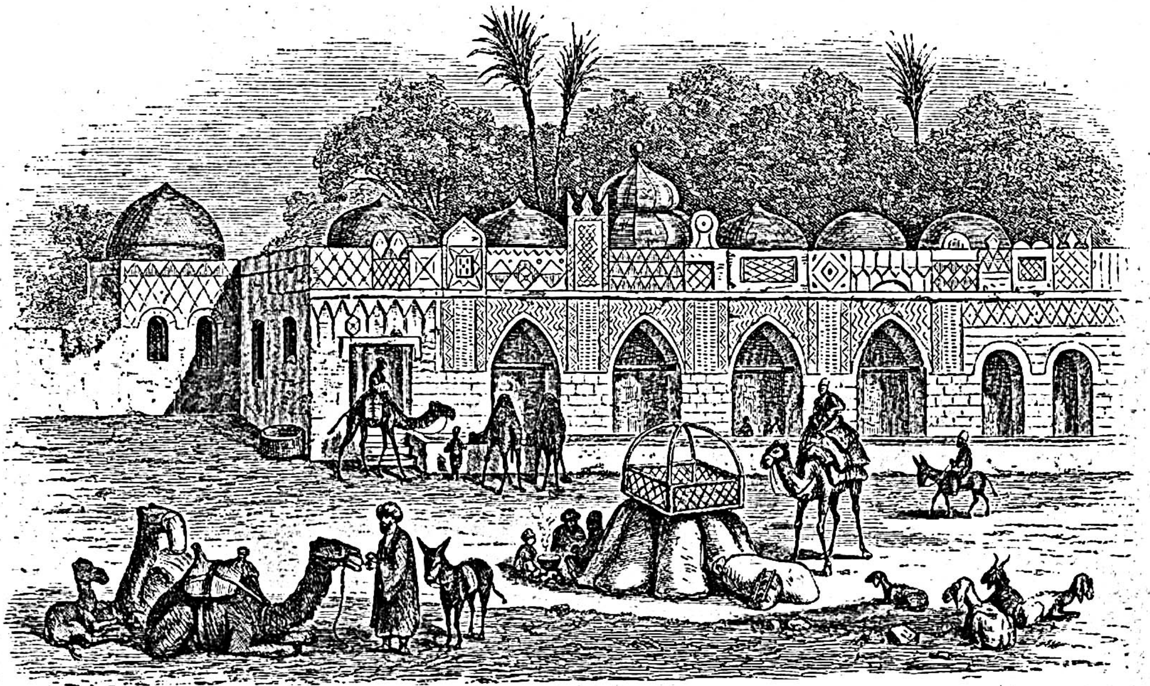
CHAPTER IV.

THE DESERT.

I.—RIDE THROUGH THE DESERT.

POINT OF DEPARTURE.

We take leave of what is called the Nile valley, the long evergreen oasis bounded on both sides by extensive deserts, in order to proceed eastwards to the desert tracts of the Egypto-Arabic mountain ranges on the coast. We have immediately in our eye that much-frequented caravan route, which, starting from some place in the Thebes district of Upper Egypt, intersects those mountains, following the course of their transverse valleys in an almost due easterly direction without any considerable ascent, and terminates in Koseir. In order to collect our energies for the exertions that await us, we enjoy a siesta under the overshadowing roof of acacias and sycamores in front of the caravanserai of the principal departure station Bir Amber; once more we moisten our palate with the sweet soft water of the Nile; we make a preliminary repast on the gifts of the valley, milk, pigeons, and fruit, and listen to the hundredfold twitter of the birds perching on the branches of the trees. The caravanserai is a building in the true modern Arabic style (see ch. i. p. 96), not without taste, crowned with cupolas and possessing colonnades and chambers. Like the ordinary caravanserais, called "wekalehs," it belongs to no one, but was built by the celebrated old Ibrahim Pasha for the general benefit, especially for the pilgrims to Meccah, who frequent this route so much. In winter it is sometimes used to sleep in; but in summer people avoid its neglected and almost ruinous chambers on account of the serpents and lizards that take up their abode in them, and prefer to sleep in the open air.



From a Sketch by Dr. Klunzinger

THE CARAVANSERAI OF BIR AMBER, NEAR KENEH,

ON THE GREAT CARAVAN ROUTE FROM THE NILE TO THE RED SEA.

THE CAMEL.

There is a great deal of stir and bustle in the front court. The famous ship of the desert, the one-humped camel, to which we have henceforth to trust ourselves entirely, is being prepared for its voyage through the desert. This vessel, which is as unpoetical as it is much sung in verse, offers much for observation and reflection; and we cannot refrain from adding our observations on this singular animal to the many delineations that travellers have given of it. Its skull nearly always points exactly horizontally out into the wide world towards the distant goal. At the top its small erect ape-like ears stand beside the small cranium. Its eyes, at the side of the skull, stare earnestly, or even, as Brehm will have it, stupidly out of their cavities, surrounded by the protruding edges of the bones and overshadowed by high shaggy eye-brows. The fore-part of the crest of the head forms a long nose like that of a ram, the nostrils of which unite at a sharp angle. A long, broad, bearded upper lip half-divided in the middle and sloping downwards in front and at the sides, a loosely pendent but extremely mobile under lip, between which opens a slavering mouth well furnished with broad yellowish teeth, complete the very far from pleasing picture of a camel's head. The long, arched, slender, and yet powerful and very flexible neck, compressed at the sides and below, and adorned above with a woolly mane, cannot be called ugly. The fore-feet appear almost too weak to support the weight of the body when the centre of gravity is brought forward as the animal leans to the front in striding along under a heavy load; but a broad, soft, elastic sole, formed by the partial union of two thick toes, provides for security. The abdominal line rises steadily towards the hinder part of the animal from the great wart or lump on the breast; the dorsal line forms several undulations in front, culminates in the well-known single hump of fat, and then descends to the rump, from which there hangs down a short compressed tail like that of a cow, rather sparingly clothed with tufts of hair on the sides and at the end. At the lower back part of the rump a longish,

smooth, ugly fold of flesh with parallel edges, the hip or thigh flesh, depends on either side, gradually diminishing in size when it reaches the lower part of the leg. This latter stiff member runs out into a very projecting heel, which is followed by a rather short ankle-bone, and then by the soft spongy sole.

The skin of the animal is covered with a kind of wool, which is longer or shorter according to the part of the body on which it grows; but as a rule it is shorn smooth, and nearly always scarred and burned, for burning with a red-hot iron is the universal remedy with the Bedouins and peasants for man and beast. The colour varies from whitish and reddish gray to brown and brown-black. A well-formed hump, the singular ornament of the *Camelus dromedarius*, is to be seen only in very young animals, and those which have been allowed to browse for a considerable time and have borne no burdens. The hard work which the animal is obliged to perform from an early age, from the time when it ceases to suck, the pressure of the burden which acts directly on the hump soon wears away the fat to which the hump owes its roundness, and there remains little more than a gristly and not very high swelling.

When in heat the male animal—which, like other domestic animals, such as the horse and the ass, is in these regions seldom castrated—acquires a peculiar coating of scales on the rump, called *samâh*. It is now uncommonly strong and unmanageable, but still continues to work and be made use of. Better known is the throat bladder, a blue and red fleshy mass which the male camel when under the sexual impulse emits from his mouth from time to time, by-and-by sucking it in again. This vesicular mass is an inflatable doubling of the palatal skin, or an anterior soft palate; its physiological purpose is still uncertain.[1] Everything is alike peculiar about the camel, and God the Lord himself, as the Moslim says, on reviewing his works after the creation, was

[1] The statement of Pliny, "camelus retro mingit, ergo retro coit," which continued to be repeated up to recent times, rests on mere conjecture. Observation proves the truth of the first part of it, the contrary of the second.

greatly surprised at this creature he had made. But in every part of its design and structure the animal seems as if expressly created for the purpose to which it is applied, as a machine for traversing the deserts. We shall not attempt, in opposition to its assailant Brehm, to wash the creature morally clean; but we admire in it contentment, sedateness, strength, endurance, steadiness, and in spite of occasional stubbornness, great patience and manageableness—a combination of qualities that no other animal displays, certainly not the ass or the mule, not to speak of the horse or the ox.

We soon begin to have a liking for this mongrel breed between ass and ox, and pat in a kindly way the body of one of these animals. But it suddenly turns its neck upon us, utters a short, angry, bellowing sound, and shows its open mouth. It does not care for the attentions of man, like the horse, and declines to be troubled in any way apart from its toils, as it also, on its part, when unprovoked, does not attack the human race. We remark with compassion how this animal, on the whole so peaceable, is tormented, and has its blood sucked by all kinds of small enemies. Gnats and gadflies swarm about its skin, especially round the eyes, gadfly larvæ burrow in its nose, its frontal sinuses, and nasal fossæ, and it endeavours to get rid of these from time to time by snorting and rubbing its muzzle on the body of a neighbour. To the anus whole colonies of blood-sucking bloated ticks have attached themselves, which the all too insufficient tail vainly attempts to brush off.

It is well known that in the ancient Egyptian paintings and sculptures (with the exception of the Memnon columns?) the camel has never been found represented, nor is it mentioned by the Greek writers of Egypt; from which it has been concluded that this animal, now so common in Egypt in a domesticated state, was then unknown in the country. But we learn from the sacred writings that Abraham had camels during his stay in Egypt, or received such from the king (Gen. xii. 16), and it is also objected that other domestic animals, fowls for example, are never found represented, and

pigeons, which exist in such numbers, but seldom, while geese, on the other hand, are frequently figured.

We amuse ourselves, while resting in the forecourt of the caravanserai, with the proceedings of a frolicsome and very long-legged sucking camel, which is to be allowed to travel with us, but, of course, unloaded. It has not yet become acquainted with the serious business of life, it runs along at a flying trot, its fat hump swaying and waggling to and fro at a great rate, strikes out with its straddling hind legs in youthful wantonness, utters a youthful bellow, and then returns to the four-nippled udder of its mother. At a dizzy height on the naked hump of a *hegin,* that is, a camel which can jump well, a boy sits laughing, as if on a divan, without support or saddle, having only the legs slightly pressed against the shoulder of the animal, and in his hand a cord which is fastened halterwise round the head and muzzle. Trotting, seldom galloping, the dromedary measures the ground, gliding onwards in long flying strides so gently and with so little shock, that, as the Arabs say, at this pace a person might sip a cup of coffee on its back. As a rule, however, the rider sits on a riding-saddle, and besides the halter, if the animal is very wild, a ring is often passed through its nose to ensure its obedience to the rein.

PROVENDER.

Chopped straw is laid down as food, whereupon the members of the herd hasten from all sides and crouch in a regular circle round the heaps of straw. But those are far better satisfied who get a bag of nitrogenous beans fastened to their heads, covering their muzzles up to the eyes. They have now no longer either eye or ear for the external world; they are altogether wrapped up in their bag, the toothsome contents of which they quickly convey into their mouths with their soft prehensile lips. The strong jaws worked to and fro soon convert the hard beans into a pulp, which is then passed through the wonderful cells and folds of the stomach (which has only three compartments), and through the long

intestines of this ruminant. Straw and beans, with the exception of a few plants which are found in the desert by the way, are year after year the only nourishment of the camel of Upper Egypt. Only in "spring," that is to say in January and February, the camel is sent for a few weeks to pasture in the meadows of the Nile valley, to feed on clover and the herbage of the chick-pea. For grass and hay do not exist in the land of Egypt. Rest and the green-fodder cure exercise a great influence, the outlines become rounded, the hump again swells out, the limbs become stronger, and these creatures, after such a new birth, again become fit for the service of man. If not allowed thus to recruit themselves, connoisseurs tell us they soon break down, and in pasture-time the owner of a camel is very unwilling to let out his camel even though a high price is paid for the hire. The camels of the Bedouins do not get beans, and such as are brought into the valley of the Nile have first to accustom themselves to this food.

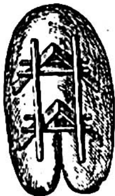
After eating their fill the camels are taken to drink at a trough or water-course. They lower their long necks to the ground, the neck now making a straight line with the head, the water is sucked in with a loud noise, and is seen rising in large waves through the sloping column formed by the neck till it reaches the stomach, while the water in the vessel is visibly lowered with every gulp.

LOADING AND SADDLING.

The beast would now prefer to walk about free and unladen, or to chew its cud in quietness, and it is by no means pleased when it is driven in between two bags or bales of goods lying there all duly packed. It makes its discontent known by bellowing repeatedly, but it obeys orders though it could easily crush the orderer. What is evidently most disagreeable to it is the moment of kneeling down; even when food lies before it it does not do this without some delay. A mere croaking guttural sound is the signal with which a person, even a young child, compels the huge animal

to kneel down before him, and if this does not follow immediately he enforces his order by pulling down its head with the loose end of the halter. The stubborn beast, while expressing its displeasure by bellowing, looks once more at the path, places its fore-legs properly, and making up its mind in despair, falls at last on the callosities of its knees, that is, of its carpal or wrist joints. The hind-legs, which are still upright, are also slowly and carefully brought into position, but the hinder quarters do not drop suddenly, the knee proper, which is situated high up and close to the body, and is also furnished with a callosity, being simply much bent and allowed to sink. Some slight movements of adjustment now follow; the fore-legs are pushed forward, the elbows bent, the fore-arm (lower part of the leg) pushed inwards, the tarsi of the hinder limbs are drawn under the body. In this way the animal, which has now become quieter, crouches on the ground, touching it, too, with only a few points, and these protected with thick callosities; the centre of gravity rests on the large chest callosity.

In loading the camel the first thing is to put on the saddle, *hautych*. This is a wonderful thing, not less strange than the camel itself. It consists of a sausage or sack shaped pad, of coarse sacking or alfa-grass cloth, stuffed with chopped straw, and bent into a horse-shoe shape, the camel's hump resting in the hollow between. It is close behind; in front it is held together by a primitive, but ingenious, compressing apparatus of wooden bars. This consists of two narrow transverse boards, meeting above at an angle, there being two pairs of these, one behind the other, at a short distance apart. Both these angular pieces are supported and kept in their places by a longitudinal bar on each side running along the upper border of the pads, and touching the boards. Holes are pierced in the boards, and thin bars and strings passed through from the board on one side to that on the other, these cross pieces both serving to keep the boards together, and also preventing the longitudinal bars from



Camel's Saddle.

slipping upwards. The saddle is only attached to the beast by a crupper, otherwise it is free, not even a girth being considered necessary, since the hump prevents it from shifting.

The load, which is fastened over the saddle by cords, must be accurately balanced, that is the first condition, otherwise the beast will soon be worn out. The shape of the load is second in importance, its weight third. A strong camel can carry about ten Arabian hundredweights several days in succession; the ordinary load is three or four. While it is being loaded the camel repeatedly looks round with an angry bellow to see what is being done to it behind. A person who is riding seats himself on the pad saddle, which he makes more comfortable, especially at the place where the wooden apparatus is, by spreading over it his mantle, a mattress, or a carpet, the universal couch of the rainless East. These serve him also as a bed when encamping.

Whoever does not consider this sufficient, either as not being sufficiently comfortable or for other reasons, gets a palanquin (*shebriyeh*) made, a longish, quadrangular frame, somewhat like a bed, formed of a few rough longitudinal and transverse bars, with sides and bottom formed of netting. This is laid right across the camel's back, and in the middle fastened to the saddle, projecting freely on either side. It is capable of receiving a whole family, provided that the weight is the same on both sides. It is generally taken advantage of only by women, for whom also a kind of awning is erected above it by means of some palm-branches, a cloth being stretched over these to render the occupants invisible, and protect them from the rays of the sun. There are several other kinds of sedans, for example the *shukduf*, a kind of chair, of which a camel carries two, one hanging at each side; the *tahtruân*, which swings freely between two camels, one behind the other; these are, however, seldom employed on this route. We get on best when we seat ourselves merely on the above-mentioned carpet-covered saddle. The chief necessaries of travel, that is to say, food and cooking appliances, we pack in a basket or box, or in a kind of saddle-bags

(*churg*) specially made for travelling by camel, and consisting of two large strongly-woven bags tied in the middle, hanging down on each side of the camel, and often richly ornamented with tassels.

We leave the camel-driver with whom we have concluded the travelling agreement to provide the water. He hangs a goat-skin on a camel, and, when drinking-water is required, pours it out of this into a round wooden cup or a tin dish, which he presents to his client seated high on his camel's back. Such drinking vessels, however, are inconvenient, as they can only be used when one is standing still; when in motion a very narrow necked vessel must be employed to drink from. The best is the so-called *semsemîych*, a leather bottle with a tube for sucking. At the watering-stations the bottle is always refilled.

If we wish to travel with great rapidity, and are not afraid of the cost, we hire a *hegin*, that is, a running or trotting camel, which carries a saddle similar to that of a horse, with a high pommel before and behind, so that it becomes almost impossible to fall off during the smooth yet rapid trot. In this way a five days' journey may be accomplished in one or at most two days, presupposing practice in camel-riding, acquaintance with the route or companions, and water and fodder stations. This mode of travelling is here very uncommon, being used at most among Bedouins; riding on horseback is still more so, and carriages are scarcely used at all in travelling.

MOUNTING.

We are invited to mount the ship of the desert. There are several methods of doing this, each of which has its difficulties. The most plausible appears to be to mount while the animal is still crouching on the ground. But we take very good care not to attempt that alone, since, long before we could seat ourselves properly, whenever it felt our weight in mounting, the camel would rise suddenly and fling us backwards and sideways. Any one who is accustomed to riding

on a camel knows that quite well, and is able to seat himself firmly at once. We uneducated folks, however, while mounting and gradually trying to settle ourselves in our seat, cause the driver to tread upon the fore-feet of the still squatting camel so as to keep them from moving, or to tie them, and fix one hand upon the bar of the compressing apparatus that projects before the saddle, pressing the other upon the hinder part of the saddle. It is only in this way that we can prepare ourselves for all the changes of our centre of gravity that we have to undergo. We give the driver a signal to release the animal, and our body is now swung in rapid succession backwards, forwards, and again backwards. For the animal first springs up with the lower part of the fore-leg (it is far more willing to do this than to kneel), then brings its hind-feet, on the stretch, into play, and rears itself at last quite upright, while it now raises the lowest portion of its forelegs and stands upon the sole.

We now find ourselves high above the ground, higher than we have ever ridden before; we shudder when we think upon our helpless condition. If the animal were to become refractory what could we do? We sit far too high to be able to steady ourselves with the calves of the legs as in riding on horseback. If we sit astride upon the broad saddle, our soles scarcely touch the ribs; if we seat ourselves, as is the common plan, with our feet dangling down over the neck or over the side of the animal, our position is indeed more comfortable but is less secure should the awkward case occur in which both saddle and rider are flung off by the violent movements of the camel. The bridle is of no use, since the cord brought round its nose has little influence on the beast however hard it is pulled. The Moslim merely cries, "The name of God on you" (*bismallah 'alék*), when it turns restive or refractory. Such misbehaviour on the part of the animal is fortunately rare, however; were it not so other means of subduing it would have been discovered before now. During its ordinary running pace we are in the greatest security.

We find that the angular projections of the wooden part of the saddle on which any part of the body rests are still in-

sufficiently padded, so that we cannot endure to ride for a quarter of an hour, and have to request the driver to let us dismount. He warns us to stick on firmly as in mounting, since the backward and forward shakings are the same, only they occur in reverse order. We can also dismount from a standing camel by grasping the projecting bar of the saddle with one hand and sliding down by means of the other on the sloping hindneck. On remounting, after our seat has been improved, we employ the second method for a change. The camel stands, we grasp with one hand that important saddle-bar, the driver forms one step with his back or his hand, the hollow of the animal's neck forms a second, and this being reached we climb as gracefully as we can into the saddle. It is certainly still better to emancipate one's self entirely from the driver, to compel the camel to lower its neck, and to get the knee upon this by swinging one's self up with one hand on the saddle-bar, whereupon the animal itself raises both neck and rider, who can now obtain full possession of his seat. During the latter operation, however, the animal is again on the march, which makes turning one's self somewhat difficult. A person should likewise learn to make the animal let him down when travelling alone, and how to bring it to the trot, and also how to dismount when on the march. But this belongs to the higher branches of the riding art; we are glad if we can mount and dismount in any manner without damage.

CARAVAN DONKEYS.

Should riding on camel-back not prove to our taste we have at our command the asses of the desert, of which considerable numbers always accompany and complete the caravans. In spite of their tender feet they are able to drag about a hundredweight over hill and dale without breaking down. With their short steps they have enough to do to keep up with the long-legged camel. It would be difficult to get the sluggish animal to go farther alone; but it follows the caravan cheerfully. It would be wholly in vain to try

to get a good trot or a gallop out of these caravan donkeys—which stand in the same relation to the riding donkeys of the Nile valley as the load-carrying camel to the trotting camel—unless they should have remained till they were some distance behind the caravan. Between camels and donkeys there are many resemblances in structure, nature, and character, and they live together pretty sympathetically.

ON THE MARCH.

The caravan, consisting of from a dozen or two up to 50 or 100 camels, at last gets seriously on the march. The drivers like to go in company, less for security, since in this desert there is nothing to fear, than for convenience and society. They help each other in loading and unloading, relieve each other in driving, and at other times mount. What one has not taken with him another perhaps has; the animals themselves are in better humour and spirits, and run better; several strong good camels give the time in running, and none will remain behind. The drivers on this route are mostly Fellahs of Upper Egypt or Ababdeh Bedouins, partly the owners of the animals themselves, partly mere servants or slaves. The march generally continues the whole day without a rest; the stilted gait of the walking machine appears slow and sluggish—a pedestrian at a good walking pace easily goes far ahead of the caravan—but it is telling, uniform, and continuous, and if a person lags behind for any reason he soon sees the caravan far ahead of him, and has hard work to overtake it.

The fertile soil soon ceases, for it just reaches as far as the overflow of last harvest extended; it is only exceptionally that here and there some small gardens like oases are met with, in the desert certainly, but not far from the cultivated surface, and fed by a deep well, in which the subsoil water collects. Before us lies a widely-extended terrace land, which rises almost imperceptibly. Small undulating hills cross it transversely and longitudinally. This region is apparently devoid of all organic life; wherever the eye turns there is

nothing but hopeless gray. Only in a few depressions between the hills, where the water of the winter's rain (which generally falls only once) has collected and formed a torrent, a small plant or a bush grows here and there, amid sheets of clay neatly collected and left behind it by the stream. We look backwards, and already see stretching far below us the valley of the Nile and the mountains on the west of the valley, there forming the beginning of the Libyan desert; before us we see distant grayish-white ranges of limestone mountains running in all directions, with valleys between them, which imagination might clothe with rich verdure and smiling homesteads, since in the distance they assume exactly the appearance of the fruitful fields of a mountainous region in a happier clime.

The soil on which we are marching is not loose sand, but very solid gravel and limestone. We have not to do with a sandy desert here. A light dust-cloud can scarcely be raised by a storm, and the heavy drift sand immediately collects again at various spots under the protection of the hills. The path taken by our caravan is little inferior in firmness and solidity to a regularly-constructed road, and since it is generally level, might be traversed without special difficulty even by a velocipede. The steps of the camels have marked out many lines of ruts, each the breadth of a foot, which wind along it longitudinally, and between which are so many raised lines of loose and seldom trodden gravel. Camels prefer to move along the beaten track, and the firmness of the ruts increases with the amount of the traffic. Nothing else is done to keep up the road; what it is it is in itself. Projecting stones no one thinks of removing. The animal, whose centre of gravity the load now throws forward on the fore-legs, runs down smaller and gentler slopes at first slowly and cautiously, but strikes into a trot for a few steps before reaching the bottom of the declivity—a serious matter for the rider and for wares easily broken. Gullies cut by mountain torrents run abruptly across the road, forming sharp breaks which cause the camels to stumble. It crosses these with lumbering footsteps, and always at the risk of a broken

leg. It is only suited for the level ground. At difficult points it turns aside of itself. On the whole, however, a fall is a rare occurrence. Pashas, who like to ride in carriages, as was formerly the custom during their pilgrimages, no longer use this route at the present day; some English ladies have themselves carried by natives in palanquins the whole long road.

On this advanced terrace the landscape offers little that is interesting. Instead of it we amuse ourselves with the inexhaustible study of the camel, including its shadow, which changes with every movement and every hour; with the rustic but eloquent language, and the rude but kindly character of the drivers, whose cudgels fall far oftener upon the donkeys than upon the faithful, or at least not unduly labour-shirking, camels; and with their fresh but somewhat monotonous mountain songs, generally religious in character; we interchange with them a short, deep-bowled desert pipe, which is filled with the coarse country tobacco, and is lighted by means of durrah pith with flint and steel. We have also enough to do with ourselves. That infernal apparatus on the saddle makes itself increasingly felt in spite of all bolstering, we sink deeper and deeper in our seat, the upper part of our body is swayed forcibly backwards and forwards with every advance of the ship of the desert, a movement which, to be sure, brings on nothing of the dizziness of sea-sickness, but is generally not long in giving the novice pains in the back. We at last become tired of riding, and take to walking for a stretch as a refreshing change.

Meanwhile the caravan has reached a spot of a brown or dark-yellow appearance, where the tread of the camels on the compact, hardened, and smoothened soil becomes almost inaudible, and a peculiar and often pungent smell becomes perceptible. This is a *urinarium* (*mabwala*). The animals halt of themselves, or at a clacking cracking sound made by the drivers, and add their contribution to the keeping up of the peculiar soil. By these remarkable spots, which recur at tolerably equal intervals, and therefore serve as excellent milestones, the drivers and Bedouins reckon their journeys,

and they are accordingly of some importance to travellers in the desert.

CAMPING AT NIGHT.

The caravans do not halt at mid-day, as unloading and loading gives too much trouble to the drivers; both man and beast must therefore make their breakfast last till evening. Luncheon or a drink of water may be taken while sitting on camel-back on the march; accordingly the journey proceeds with little interruption from morning till evening. The shadows become longer, the mountains and the horizon assume a ruddy hue, and the caravan begins to think of its quarters for the night, so that supper and the camp may be prepared before daylight is gone. The camels, too, are obviously tired out; they often look round about and begin to pick up and eat the balls of dung dropped by their brothers. In this operation the drivers now vie with them, but they select only the older and drier to serve as fuel. The caravan turns aside from the path and seeks out some soft and quiet spot sheltered from the wind.

We dismount, get our carpet and head-cushion spread on the soft dry soil, and lie down immediately with great satisfaction; for our back is in want of the support we have long had to dispense with, and we can now stretch and move our legs at our leisure. The carpet, or it may be only the soft sand of the camp, is, to one who travels by the ship of the desert, like the land to the sea-sick traveller by sea. In this condition a drop of brandy is a very healthy medicine in hot or cold weather, and quickly dispels all fatigue. Not less effective is a cup of tea or coffee, but these take some time to prepare. If we have no servant the driver readily attends to us, but as soon as he has made our couch ready he leaves us in the lurch in order to look after his beasts. Making them lie down one after the other, he removes their loads. They do not lie down of themselves, and if not attended to would prefer to run about with their loads in search of pasture. They are now fed in the way we have already described.

In the evening only the bag of beans is usually given them, while in the morning they are allowed to fill their bellies with chopped straw. They get water when any is to be had. In order to keep them from straying in search of pasture one of their fore-legs is tied up, so that they can only move by hopping along. The donkeys have both their fore-legs tied together. It is only now that the driver thinks of us and of himself. He is our guest and we his, for in the freedom of the desert there is no distinction of ranks, and Bedouin law prevails. The fire is either made with brushwood brought with us or picked up by the way, or with dried camel's dung, which gives a very good coal fire. So soon as it is ablaze coffee is made, and afterwards some simple dish is cooked, generally lentils, since Esau's time the favourite food of the desert, and to it we eat the biscuits we have brought with us, that is, toasted ordinary bread softened in water. If we think cooking is too roundabout a process, we content ourselves with hard-boiled eggs, dates, date-bread, cheese, or still better, pigeons, fowls, or butcher-meat roasted at home. The drivers always like to have something warm; they take out of their sacks a wooden dish, each gives his contribution of flour, they knead a lump of simple unleavened dough, spread it over a gridiron, lay this above the glowing camel's dung, generally directly, but sometimes with an iron plate between, and cover it above with another plate. In this way is made the *desert-cake*, the *kurs*, the chief and favourite food of the drivers. These now take their meal in common, inviting everybody around, travellers and Bedouins, to share with them, and we too have to try the toothsome piece of pastry and pretend to like it. On the remains of the dung fire we place once more a coffee-pot, and cause the bitter Mocha to be served out to our hosts.

Meanwhile it has become dark, one star after another breaks through the darkness, and soon—so short is twilight in these latitudes—the vault of heaven stretches in its full untroubled splendour above the camp. The company light their pipes and chat away, sitting in the well known favourite squatting position. When it is cold the groups draw more

closely together, and crouch around the oft-poked fire of dung. Everybody then lies down among his baggage on the sand, or on the ever-serviceable cotton-plush, which to-day has already been used as a plaid, a head-covering, a fodder-cloth, a sack, and a basket, and now becomes a carpet or a coverlet. For the cold nights of winter one would do well to provide himself with a heavy cotton and also a woollen cover. A tent is seldom used for these short distances; carrying it, pitching and taking down is considered too troublesome by the people. As a protection from the boisterous winds of winter, a barrier is constructed with bales of goods or bags, and at night a person draws the coverlet over his head, the glare of the sun is kept off by forming a kind of awning with the ever-present wrapping cloth. No one gives his personal safety a thought, the whole caravan scarcely possesses a single firearm. For in this desert, or, at least, in this part of it, there are no robbers nor murderers, not even thieves, unless belonging to the company. Attacks by hyenas or other wild animals inhabiting the mountains are unheard of. Only when the camp is made in the neighbourhood of human dwellings one has to take care that the thievish dogs, or even the sheep and goats, do not get at the stores, since at unguarded moments they snap up bread, &c., though lying beside us and even under our pillows. Thus the whole caravan, both men and beasts, soon sink into a deep and well-earned slumber.

THE MORNING CAMP.

The coolness of the morning breeze, which ceases soon after the morning star rises above the mountain, arouses the sleepers. Packing is quickly finished and the camp broken up; the morning camp, which to the camel-driver appears indispensable, partly because the animals must be fed, partly because he must take his own breakfast, will be held at the neighbouring water-station. On the eastern horizon appears a glimmer that becomes brighter and brighter, forms become more distinct, the tops of the mountains are illumined, as

the sun rises we hear a barking, and immediately afterwards we distinguish human abodes, the dog, the man, and the water. None of these four objects, in the desert at least, is to be thought of without the others.

The caravan leaders otherwise do not pay much attention to stations; the caravan marches from morning to evening, and passes the night at whatever spot it may have arrived at about sunset, human dwellings are even avoided on account of the dogs. Water is drawn at the watering places in passing, the skins are filled and the camels watered standing. The desert village Laketa, however, is not so lightly regarded as a station. There fowls, pigeons, sheep, and goats are to be had, and also company besides the villagers, as several caravans are always met with here, either resting from their journey or strengthening themselves for a fresh one; fruits and vegetables, brought by the caravans, may often be obtained from them. At the same time, on the return journey to the Nile valley, when the main portion of the difficult road has been traversed, the traveller treats himself to a little good eating here, cooks for himself at least some pigeons, and the richer individuals make a present of a sheep to their company.

DAY MARCH.

We are again seated aloft on the camel-divan; we see before us wide flat tracts, bounded by a transverse chain. One crown of hills after the other bounds the horizon, a new one always succeeds, showing so near through the clear air, though by the measure of reality so far removed. There too, at the distance of a quarter or half a league, lies a lake, there follows another and again another, a whole system of lakes, some of them even fringed with palms. But everyone knows that they are mere illusions of the malicious, mocking devil, they are the *bahr esh sheithan*, while the man of science calls such atmospheric reflections a kind of *fata morgana*, in which the ground plays the part of the silvering of a mirror, and the strata of air immediately above it that of the reflecting glass.

The sun rises higher and higher. Were we in regions a little farther to the south it would send its rays perpendicularly down upon our heads at mid-day in summer. We see and feel the twenty-sixth parallel of latitude. The glare of the sunlight on the clear gray ground dazzles the eye, which requires a pair of desert spectacles to subdue the glare. The atmosphere is extremely rare and dry, not sultry, but in this district as a rule there are no air-currents of any force, and, accordingly, the sun's rays act with full power upon terrestrial objects, and among these in the first place on our noses, faces, and the backs of our hands. After a journey in the desert these parts are always at least reddened and browned, even at the cool season. If, however, parts of the body less accustomed to the light are exposed, even for a short time, to the glare of the sun, as for instance when the trousers slip up in riding, an erythema is caused, and, in an aggravated form, an outbreak of a multitude of little watery pustules, accompanying a burning eczema that gives us plenty to do for some days, not to mention the peeling off of the sunburned skin for weeks after. The skin is the more tender the clearer it is. One would expect the opposite, seeing that a burning-glass does not light a paper cigarette. And yet the Fellah, the Bedouin of this desert (the Abadi), and the Moor, exposes the whole of the dusky surface of his body to the burning sun without inconvenience. This must be nothing but the effect of custom. According to the oriental custom, taught by experience and also adopted by Europeans, the head must be the more thickly covered the higher the temperature is, and if it is uncovered, even for an instant, a person unaccustomed to such exposure is immediately liable to the severe phenomena of sunstroke—fainting, headache, excited circulation, somnolence, extreme feebleness, and not seldom even instant death. The Abadi wears no cap on his curly head either in summer or winter, and even on the smooth-shaved poll of the Fellah, who often cultivates his field in summer bareheaded, the glowing sunbeams beat without effect. In such warm days, with the thermometer at 76½° F. in the shade, a journey in the desert is of course no pleasure, and unless people have urgent busi-

ness they put off their journeys till a cooler season of the year, autumn and spring by preference. It appears a very feasible plan then to march at night and camp during the day. But this plan has also this great disadvantage, that from morning till evening a shady spot can scarcely anywhere be found. If a person buries himself among bales of goods, or keeps inside a tent, he excludes, along with the sun, such slight currents of air as there may be, and at last prefers to seat himself again on his camel, covering head, hands, and all other parts as well as possible, and holding up his white umbrella lined with green.

But the *samum* or poison-wind also blows frequently in these regions at the hot season of the year. In the afternoon the wind generally veers round and blows from the west—from the Sahara and the Libyan deserts. The atmosphere, previously so clear, becomes darkened, impregnated as it were with atoms of sand, the sky has a grayish appearance, the sun looks like a yellowish-pale or reddish disk; one sand cloud after another rolls up, lashes the traveller turned towards it in the face, and rubs his eyes till they are sore. While the air of the desert in its dryness was previously so agreeable and healthy, the glowing samum renders the body dry, relaxes the limbs, and produces a prickling of the nerves like that caused by electricity; the traveller feels he cannot go farther, and camps. The samum that came on, now gently, now roaring and storming, generally ceases after a few hours, and air and sky again become clear. This peculiar west wind breaks on the middle mountains, into the valleys of which it hardly penetrates, and it scarcely ever reaches the maritime border of the mountains and the sea.

We are now somewhat more than 20 leagues from the Nile valley. The country we have hitherto crossed has been a great, almost level terrace-land, the soil being gravel or limestone. Sandstone now makes its appearance, and the hills and mountains come more closely together and begin to form the sides of valleys, while with these at last some vegetation appears, hitherto wholly absent. The sandstone, which is yellowish or reddish in colour, rises sometimes from the

valley bottoms in lofty, isolated, quadrangular rocks, water-worn on all sides; such a rock among others is the so-called Maiden's Castle (*Kasr el banât*). But soon dark, lofty, steep mountain masses show themselves and seem to bar the way. We can no longer march so straight onwards as before, a deep narrow valley winds through the hard rock which belongs to the primeval mountains. Bare rocks show themselves everywhere, torn with wild ravines and chasms, the mountain walls are covered with loose blocks, both large and small, but with no soil. These threaten to crush the traveller; a number of them have indeed fallen down into the valley and lie right in the path. At the entrance to this valley, beside the caravan route, is a cistern, the well called Hamamât; there are several such on the road, and a good many among the mountains. They are generally deep, built-up wells, from which the water is drawn up by leathern buckets, or a stair leads down to them, a structure of which a son of the country longing for coolness not infrequently makes use to descend to bathe in the cool basin below, from which others obtain their water for drinking and cooking. Along the whole road, but especially in this valley, antiquities belonging to the ancient Egyptian and the Greek periods are seen.

The route that the caravan takes lies on the whole in a single transverse valley from the Nile to the sea, and of such there are several to choose from. Here a multitude of caravans are daily encountered, embracing from one or two animals up to hundreds, and generally carrying nothing but corn from the highly-favoured Nile valley to the sea-port, the corn being thence exported to Arabia, which is poor in this commodity. It is difficult, however, to cross the watershed, which there forms a high valley 4 or 5 miles in length, sinking at both ends in the form of a steep rocky ravine. For a camel to cross such passes is just within the bounds of possibility. The camel is at home only on level ground; at such places it is apt to stumble, though it attempts with its natural caution to find a suitable spot on which to plant its every footstep; at places that appear to it very difficult it often stands helpless, till the driver leads it over by the bridle.

To go up a slope, however, is a much easier matter for it than to go down one. Slipping, falling, and broken bones are by no means rare in such circumstances, and it is always better to dismount both for our own sake and that of the animal. Animals that have fallen and broken some of their bones are left lying on the spot; some fodder is given to them, and they are handed over to the care of the neighbouring Bedouins until they have recovered, or till the butcher who has bought them for a trifle arrives from the next town. At such spots are found a multitude of stones and cairns erected by human hands; these are mementos of their presence set up by the passing pilgrims.

Thus we wander onwards in the mountains; narrow valleys and ravines alternate with opener areas more resembling plains; lofty mountains several thousand feet high, with chains of hills formed of debris; absolutely desert tracts, with oasis-like spots and steppes nourished by a visible or invisible well. Here is no longer the waste loneliness of the plantless outer terrace; the geologist admires the variety and the structure of the primary rocks everywhere laid bare; the botanist plucks the small and ephemeral plants, the zoologist hunts and collects, as well as it can be done on the march, the antiquary inspects the ruins and deciphers the inscriptions.

MARCHING AT NIGHT.

Still, these mountains are but a desert, and we strive to get out of them as soon as possible. We arrange with the leaders of our caravan to make a journey by night, and having pitched our night-camp at some suitable place, we break up about midnight and move along by the dark mountain heights. It is not pitch dark, the starlight of the southern sky shining through the transparent atmosphere lights up the path sufficiently to prevent us from making any false step, although the ruts or trodden paths appear to us to wind deceitfully up and down. The camels go faster in the cool night air than by day, and the casual highway fodder, as yet invisible, does not distract their thoughts. For hours

on end we hear nothing but the gentle tread of the soft soles of our animals, and at times a "Hi!" from the watchful driver, and the thwack of a cudgel on some of the donkeys, which cannot follow the quicker night pace of the camels. Our eyes and thoughts are forcibly drawn from the terrestrial desert lying invisible around us to the infinite region of the spheres of light. We find again the constellations of the North from the polar star and the Bears to the brilliant Orion, and discover now too the great Scorpion in its whole length, the Southern Crown, and still just above the horizon Canopus. The driver, like every Egyptian, is an accomplished astronomer; but the names he gives to the constellations and his manner of grouping the figures often vary from those depicted on European maps of the stars.

From the stars our thoughts wander to the countries of that more northern region to which we belong; we recall to mind the blessings derived from the superior cultivation of the soil, the flourishing state of art and science, the mighty advances made by commerce and industry, the order in civil and political life, the power and the riches of the nations, lastly, the power of public opinion, fighting on the side of justice and morality. Directly the contrary of all this is what we see in Mohammedan states. But we find that amidst the blessings of civilization there swarm all kinds of gnawing cancerous sores and examples of glaring wretchedness; and the Frank is by no means justified in always looking down upon the Oriental as the sick man. The Moslim is essentially a natural man guided by faith in his religion, which, when rightly interpreted, is as capable of giving him the stamp of a good man as any other. That art and science can flourish also on the soil of Islam history shows, and that a Mussulman, who is a true believer, is not necessarily a fanatic, any one may convince himself who has an intimate knowledge of both country and people. To be sure, as things are at present Islam is numbed and petrified, and all high effort is wanting to its believers.

Moreover, as the Frank looks down upon the Oriental on account of his ignorance, so does the Oriental look down

upon the Frank on account of a multitude of customs that to him appear strange, ridiculous, undignified, even indecent, and the Oriental is not so far wrong; indeed, the Frank who has become orientalized in his ways latterly laughs at himself for many things that he formerly did, and thought natural and matters of course. The Oriental detests above everything the emancipation of women, which he stigmatizes as indecent, shameless, and immoral; in his eyes a ball is an act by which the husband calmly allows his wife, the father his daughter, to revel in the arms of a stranger. Indulgence in wine and spirits is the other chief symptom in which the Moslim believes he detects civilization. The Frank also appears to him as unclean, because he uses as food pork, blood, and carrion, that is, the flesh of animals that have been strangled, not properly slaughtered, and because he does not wash or bathe before meals, nor generally after them, nor in connection with his devotions, and not a great deal at other times; from the throne of his dignity, clad in his long flowing robes, he criticises the goings on of the army of Frankish fops, their cravats, their stiff collars, their kid gloves, their chimney-pot hats, their tight trousers, their dress and other coats, the many different forms of their beards ("the Franks have no dignity in their beards"), and such like. And none of the strange fashions of the women escape him, any more than their falseness, unnaturalness, and want of taste.

It is the scum swimming on the top that first meets the eyes of the novice, and in indignation he pours out the whole untasted contents of the proffered cup of civilization, or he himself becomes the victim of this scum. He is only too ready to adopt the vices of the Frank without giving up his own and adopting the virtues of his model. Since, in Egypt at least, it is attempted to introduce forcibly a kind of superficial civilization from the top downwards, the people will soon degenerate if the healthy kernel which exists in the Moslims does not exercise a counteractive effect until at last true civilization, which is unceasingly spreading, shall pave a way for itself.

All at once we awake from the wild improbable dreams to

which the rocking gait of our steed has lulled us; we have slipped down a little and lost our balance. It is a wise provision of nature that in such cases the sleeper awakes just before the crisis. We hold on by something or other, fear seems to have quite dispelled sleep, and we rejoice that we are still far from the miseries of civilization, of which we have been dreaming in the ever free, unsullied desert. But in a few minutes, through the constant action of our cradle, we again fall asleep, to start up suddenly as before. In this painful intermediate state between sleeping and waking, which often means as much as between death and life—for many a man has ere now met his death by sleeping on his camel, or, at least, has fallen and broken his limbs—we look with envy upon our native companions, the drivers, who, placed aloft, snore for hours on end in the most perpendicular positions, their feet hanging down on one side, their head on the other, right across the camel. The camels march on instinctively, even when the driver has fallen asleep; but sometimes one of them, often the very one that carries the sleeper, remains standing, and it may happen that when we come to look around us we find ourselves quite alone in the wilderness, and neither shouts nor the report of a gun can reach the ear of the guide who has fallen asleep and been left leagues behind us. As a rule, however, a person joins a whole caravan, and then the driver who is keeping watch has to march behind on foot.

THE LITTORAL SLOPE OF THE MOUNTAINS.

The night march has helped our progress, and by the time it is day we have reached the littoral slope of the mountains. The air, the soil, the water, the rocks, the structure of the mountain, and to some extent also the animals, plants, and people, change their character. A fresh, pure sea breeze blows from the north, or, laden with clouds and moisture, the warm and oppressive south-east wind (*Asiāb*), which, along with the always pleasant north wind and the cold north-east (*masri*), rules the winter half-year, and which is

kept from reaching the Nile valley by the intervening mountains, as the samum from the west has its progress eastwards arrested. The springs that here and there occur have a very bitter taste, and sometimes give out a smell like that of sulphuretted hydrogen. In places the soil appears loose, crusty, yellowish, moist, as it were, spongy, and impregnated with a saline fluid. A bitter, perennial rivulet, the Ambiga, makes a vain attempt to trickle farther down into the valley, and gives a verdant existence to a grove of rushes, but after a few days' rain becomes a raging, devastating stream.

Already at a distance the most striking feature of this littoral portion of the mountains is the long-stretching ridges of white limestone hills which rise youthfully between and among the dark and ancient primary rocks. The heart of the traveller, fatigued with his long journey through the desert, beats high when he sees them, since his goal, the sea, must be near.

From the bare hill-terrace that spreads out before us we perceive on the eastern horizon a bluish-black band which separates the earth from the clear blue vault of heaven. The camel accelerates his pace as we march down a valley of no great slope, that of the Ambagi. This opens out more and more, we hear behind the last hills a roaring and booming, and at last we stand before a town, the seaport of Koseir, and on the shore of the eternal sea, after traversing a stretch of 43 leagues, to accomplish which the caravans require four or five days on the "up journey," that is, when going from the interior to the sea, and three or four on the "down journey," from the sea to the Nile valley.

II.—THE NATURE OF THE DESERT.

CONFIGURATION OF THE MOUNTAINS.

The mountain mass which we have crossed is apparently a confused agglomeration of mountains and valleys where no brook nor river affords a safe guide. But abundant traces of

the action of water compensate for this want, and it is generally easy to trace out the river and valley systems, even if the region is not traversed on those rare days after winter rains when the rivers really exist. Channels are seen on the sides of mountains, traces of brooks, of waterfalls, beds of rivers, some of them streams with wide valleys of embouchure. Nay, along the very summit of the mountain mass runs a regular water-shed, from which the waters must run either westwards into the Nile valley, or eastwards into the Red Sea.

RAIN AND RAINWATER-STREAMS.

During summer the sky is almost always entirely blue and cloudless; at the winter season, however, the tops of the mountains are often enveloped in clouds, especially after moist south and south-east winds. Then the soul of every dweller in the desert is filled with new hope; if the clouds become denser and blacker, the children march about with white streamers and shout, *Ya Allah idina sél, chna 'abîdak u el chér bi idak,* that is, "Dear God, give us a rain stream; we are thy servants, and blessing is in thy hand." The women and girls make a cross-shaped frame with two pieces of timber, put a shirt and a veil on it, and carry this figure about in houses and courts with singing and trilling. Hitherto the dweller in the desert town (Koseir) has had to get his fresh water brought in skins a distance of several days' journey, from springs in the mountains, and paid dear for it. But now he hopes to be able to obtain the precious liquid himself before his own door, and to fill his store vessels with a supply for months to come; the Bedouin hopes that the mountain wells will be filled, that pasture will be procured, and the deadlying desert revivified. But very often these hopes are cheated; the north wind, that rules everything, begins to blow, and in a moment the sky is again clear and blue. Two, three, even four years may pass without the aqueous vapour falling in a bounteous rain. Still the attempt of the southern sky to pour out rain is often successful, once at least on an average in every winter, and then it often does its duty in

superabundant measure. In the midst of incessant thunder and lightning, as if a dozen storms had joined together, the rain pours down, being often mixed with heavy hailstones. The flat roofs of the houses of the desert city, which houses are built of unburned bricks made without chopped straw, give way "like sugar;" if they are not in good condition the water makes a hole through the ceiling, and in a short time the room, the terrace, the court-yard are converted into a lake, the streets become lagoons, filth-swamps, and streams, which sap the foundations of the houses, so that some fall at once or after a few days. In the mountains the Bedouin flees with his tent and all his belongings to the more elevated points of the valleys or to the hills. The caravans, thoroughly drenched, must come to a halt, and do not reach their destination without difficulty and danger, caused by the slippery ground, here and there converted into a torrent, or only after a very circuitous route.

Fortunately, however, these downpours do not last long, and now old and young march out of the town to look at the river that has filled the valley, many also, particularly the women, to bathe in the cool stream, not seldom to the danger of their lives. All who have strength enough, men, women, and children, convey the newly fallen fresh water in pitchers or skins into the houses; all the donkeys and camels are loaded, and the water caravans from the mountains find their labour lost, and, emptying out the mountain water they have carried so far, set to work in the river with the rest. For it is only a short time that the water of the rain-torrent remains fresh; in a few days, when the flow ceases, it absorbs salt and bitter elements from the soil, but the great bulk of the stream falls uselessly into the sea, instead of being stored up in cisterns.

At other times the clouds discharge themselves at a greater distance among the mountains, and in the town, on the sea-coast, only lightning is seen and thunder heard. Then perhaps a Bedouin will come into the town the next day with the strange information that "the river is coming." If only a small quantity of rain falls it is immediately drunk up

by the thirsty soil of the desert; if, however, it is greater, and the spot where the fall took place is also not very distant or very limited, the surface water gathers into rivulets, the larger valleys receive all the waters of their tributary valleys, and thus the whole is finally collected into a mighty stream in the main valley, down which it rolls like an outflow of lava, when the slope is small often very slowly. But on many occasions also the rain that follows falls on the other side of the watershed, on the Nile side, in which case the thirsty towns on the Red Sea and the dwellers in the Nile valley are equally annoyed. For the stream of fresh water then carries devastation over the laboriously tilled fields of the Nile peasant, who requires no other river than his Nile. In the Nile valley itself showers are far more seldom than in the mountains.

The valleys of the eastern slope of our mountain mass stand in the closest relationship to the sea-ports on the Red Sea, which are directly the result of the former. For in these regions the sea is fringed along the coast by a coral-reef, called a coast reef. Now, as is well known, fresh water kills the coral animals. Accordingly, where large masses of fresh water enter the sea, the coral polyps cannot continue their labours, and thus arise the *sherm*, or reef-openings which form these ports. As a rule the size of the *sherm* is in direct proportion to the magnitude of the respective valley system. Of course the stream that at present so seldom flows down these valleys, is not sufficient to account for the formation of the sherm, scarcely for its maintenance. We must go back to earlier times, when more permanent or more frequent streams flowed through, and, to some extent, formed the valleys. That this must have been the case is testified by the alluvial tracts, the heaps of gravel and pebbles transported by water, and the water-worn rocks, phenomena visible everywhere on a large scale. Under present circumstances, when at most a rivulet is formed only once a year for a few days, a thousand years would produce an equal result to that produced by a permanent stream in three years, in rounding off and wearing away the hard rocks of the mountains, and

in accumulating such masses of debris. Similar observations made in the neighbouring desert of Sinai, so similar to ours, perhaps admit of the inference that such an abundance of water continued down even to historic times, seeing that the Israelites were able to maintain themselves several years round Mount Sinai, while at present only a few Bedouins roam there. Our desert also, as numerous remains inform us (see below), was formerly much more thickly inhabited. This mountain region is, therefore, essentially an *erosion desert.*

GEOLOGICAL CONSTITUTION.

The constitution of the surface, in its individual features, naturally depends upon the geological formation.. In the west, towards the Nile valley, we have tertiary nummulite limestone; here the desert has the character of a plateau-desert, like that of the Libyan desert, of which it forms merely a continuation, separated by the Nile valley. This formation is followed on the east by a sandstone, which appears to belong to the "Nubian sandstone," one of the latest members of the tertiary formation. The middle, the heart of the mountain system, is occupied mainly by dull-looking primary rock, consisting of diorites (green-stones), diorite-breccias, and black or green-stone porphyries; with these are often intermingled very beautiful red-coloured granites and porphyries, and massive highly-coloured veins and lodes everywhere permeate the dark rock. The chief masses, those on which the others, so to speak, rest, are mainly composed of such granite, gneiss being less common. They rise to a height of 400 feet. These rocks are nowhere covered, as in other countries, with a layer of humus; but the geologist is not allowed to behold Earth in all her nakedness, since the superficial layer is generally traversed to such an extent with fissures, often of considerable depth, that it is not easy to break off a fragment the size of the fist showing a fresh fracture on all sides, while in ascending a mountain, from the crumbling of the surface, a firm footing cannot be obtained. In other districts, where much rain falls, this disintegrated

rough-casting is washed away; here it remains, and the whole of the mountains look as if burned by the sun. The rocks in some ravines, where there are permanent waterfalls, do not show these fissures; they are firm, hard, and smooth as marble, since the water can take effect here.

It is not till towards the Red Sea that chains of stratified limestone mountains again appear, but they often advance far into the ancient mountains. They are mostly long straight mountain ridges, consisting of pure limestone or dolomite, and containing numerous flint nodules interspersed. The fossils show them to be genuine members of the cretaceous system. In the valleys isolated masses of sandstone occur along with them, often showing the action of water all round them, devoid of fossils and pretty rich in iron. The nearer we approach the sea the more readily do we find in these limestone ridges organic remains of animals that still live in the Red Sea; the transition from the chalk through the tertiary (which, however, here exhibits no trace of nummulites) to the modern period is thus, therefore, quite gradual. The interior crystalline mountain mass always stood out as dry land. The Red Sea has existed at least since the cretaceous epoch, and has withdrawn into its present limits quite gradually, and this withdrawal is still going on, as every one who has dwelt long on the coast knows, the fact being proved by many harbours, which, though celebrated in antiquity, are now dry land. Shells which are also found in the sea, for example, the well-known large Tridacna, are often found in earthy layers unpetrified, as if they had been just cast up by the sea, but upon mountain-spurs hundreds of feet above it.

Many parts of the limestone mountains, especially of the latest formation, are in process of transition to gypsum, and this is perhaps a consequence of the decay of the animal substances; the gypsum is found in all valleys that lead from the sea to the mountains, even large mountains and mountain groups are converted into gypsum. Other parts have a tendency to crumble into the form of dust, such as may be seen on walls built of bricks containing iron-pyrites; these soils, which are everywhere found in the neighbourhood of the sea,

are called by the Arabs *zabach*. The cause is evidently the attraction of moisture by the salts contained in the stone. The salt often separates in thick crusts and layers as mountain salt, which is often dug for, since other salt, even sea salt, is difficult to procure on account of certain government regulations. Other useful minerals are not worked in these mountains at the present day. From many traces as well as historical notices, however, we learn that they were worked in ancient times, in those of the ancient Egyptians, Greeks, and Romans, and even the Arabs (in the fifteenth century); there were silver, gold, and copper mines, and in antiquity the emerald mines farther to the south were highly renowned, though they are now unproductive. In the neighbourhood of these, in the "lead mountain," some lead-glance is found, but not in sufficient quantity to be worked. In digging for these treasures in the deserts the great obstacle is the difficulty of communicating with the outer world, and the want of water and fuel. That was also the reason, combined with the small quantity to be obtained, why the working of the sulphur mines, which lie farther north at Gimse opposite Tor, and southwards in Range, did not pay. Coal has often been searched for, but coal proper is entirely absent, and if anything of the nature of coal is ever found it will be lignite. Petroleum is found close to the sea, near the above-mentioned sulphur diggings at Gimse, on the Gebel Set or Oil Mountain. The ancients employed stones from these mountains in making columns, sarcophagi, sphinxes, &c., which, in the neighbouring ruins of Thebes, still excite wonder, being transported there by methods still unexplained; especially the diorite-breccias from the valley of Hamamât (see above), the so-called *verde antico*, also dark green-stones and red porphyries and granite. That this valley was once a busy scene of life is evidenced by the numerous ruins and ancient Egyptian sculptures hewn in the rocks.

SPRINGS.

As in other regions in forming their settlements men followed the course of the rivers, so here in the desert mountains

the springs or wells have become points of attraction, round which the nomadic inhabitants erect their huts until they dry up. The caravans prefer to halt in the neighbourhood of the wells; the town's people must get their water from them; they form the natural rendezvous of all the higher and lower animals that live in the desert. Vegetation also is usually more luxuriant than elsewhere at these moist spots, and accordingly these wells are the natural centres of life in the desert. The rain which from time to time moistens the mountains, is fortunately not all carried by the river to the sea; a considerable portion penetrates the soil, maintains itself there for a long time, and supplies moisture to the roots of the plants, and to the germs that are slumbering everywhere around. Another portion of the water penetrates deeper, and here and there appears again of its own accord as a spring, or is brought to light by digging an adit or a deep well. In order to collect and retain the water of the deep spring the well is then lined and built up. Cisterns, in the sense of rain-water being directed into a pit and kept there for years, do not exist in this desert. Immediately after rain has fallen these wells are naturally richer in water, many soon dry up, but some hold out for several years, even though they do not receive any addition from new rain. At certain places the springs are so rich in water that they form permanent brooks, which, however, lose themselves in the sand after a short course; others precipitate themselves over rocks in the form of waterfalls in wild and romantic ravines. These wells might be increased at will. On the great caravan route from Kene to Koseir, which thirty years ago was also the overland route to India, the English constructed a number of well-built wells, but these unfortunately are not kept in repair.

The quality of the water in the desert wells is, to be sure, generally none of the best; in the neighbourhood of the coasts, where limestone and dolomite prevail, it is brackish or bitter, often scarcely drinkable, in the diorite formation it becomes more drinkable, but always contains some magnesia, so that it is not very suitable for washing and cooking. Pure water springs only from the granite, the gneiss, and the diorite-

breccias. But this also soon putrefies when carried in skins, and can only be purified again by allowing it to stand for several weeks in jars. Oases, in the sense of cultivated spots in the middle of the desert, do not exist in our district, but they might perhaps be produced in many places, and thus a part of the desert brought under cultivation. At Koseir, where the soil on the coast is poor and saline, a garden was laid out many years ago, and date-palms, tamarisks, Nile acacias, and in rain years many kinds of vegetables, thrive in it, though not very luxuriantly. The same would be much more easily accomplished on the better soil of the interior of the desert, if a person were only to be at the expense and trouble of sinking a deep and abundant well, and cultivating the soil by its means. Water exists wherever plants are found, and the trees and shrubs scattered everywhere do not perish even after several years of drought.

VEGETATION.

Our desert is by no means a perfect desert, that is, a tract utterly devoid of vegetation, like a great part of the Sahara; on the contrary, after an abundant rain the valleys are converted into verdant pasture-steppes. As early as January, or even earlier, a few weeks after the winter rain, green herbs and bushes sprout in every hollow, in every ravine, in every valley, while the old perennial plants put forth new leaves and flowers. The flora is at its finest from February to April, but after this the sub-tropical sun burns up one plant after the other, and in summer only the deeper-rooted trees and shrubs remain. The western plateau-like portion of our desert, however, in vegetation as well as in appearance, more resembles the Libyan desert, and is very poor in plants.

By far the most common desert plant of this region is the *zilla* (the desert-thorn), a small shrub with blossoms like those of a radish; it is this chiefly which from a distance gives the valleys the appearance of green meadows. While the ass, so highly renowned as a thistle-eater, prudently holds

aloof from this thorny bush, the thick-tongued camel takes the highest pleasure in chewing large quantities of the tongue-pricking shrub without losing a drop of blood; it even swallows the strong prickles of the acacia with delight. If a caravan, after a long march, arrives at such a zilla-steppe, all order is at once lost, the camels begin tearing at the bushes and mind nothing else, and the only remedy is to muzzle them with muzzles of cord. The dry zilla, called *dris* or hay, is also eaten by the camel like straw; it gives good brushwood for fire-lighting, the dry bushes catching fire very readily, and by kindling them we can easily form a picture of a steppe-fire.

In many places the broom-like *march* (*Leptadenia pyrotechnica*) grows, a bush with long twigs and generally leafless, and which is also readily eaten by camels. The zygophyllums are very common desert plants; they are excessively salt, and are eaten only by the hungriest Bedouin camels. Though growing in the driest years and in the driest spots, strange to say, these plants are exceedingly succulent; yet dew can have nothing to do with their nourishment, as scarcely any dew falls in the desert. The Cleome, whose leaves exhibit considerable resin-glands on long hairs, is noticeable from its growing in the form of small hemispherical bushes, as round as if cut with a pair of shears, and from its strong aromatic smell, which, being disagreeable to the natives, has procured it the name of "stinking." It is disliked by all the domestic animals. In rainy years there are abundance of pasture-plants, such as the Leobordia, a highly-prized labiate plant, the scented composite plants Pulicaria and Brochia, the rough Forskalea and Anchusa, a scentless Reseda, &c. The elegant astringent *Lotus arabicus* is regarded, whether justly or unjustly, as forming a poisonous food for sheep and goats, which nevertheless eat it. Shady, murmuring tamarisk groves, enlivened with birds and insects, and consisting of hundreds of trees, astonish the traveller at all seasons of the year in the grayest and most lonely wilderness; and where the soil is saturated with moisture by purling streamlets, that last all the year round, or lagunes of sea-

water, the eye is gladdened by spreading meadows of green rushes.

Medicinal plants also spring from the soil, especially the bitter colocynth, which everywhere creeps along on the borders and slopes of valleys, with its cucumber-like stems, which bear large numbers of smooth round fruits like apples, at first green and then yellow. The native inhabitants have a great fear of this purgative lying so close at hand; they scarcely touch the apples, since these make the hand bitter, and do not care to use them as a medicine; while the Bedouin fills the rind of the fruit with milk, and drinks the milk next day as a laxative. Senna, a plant having a considerable papilionaceous blossom with large wings, is common, but not here in sufficient quantity for collection, as it is farther south and in Arabia. The aromatic Artemisia (a species of wormwood) also belongs to the quarter, as well as the Calotropis tree, with its corrosive milky juice, and a shrub, the *Dæmia cordata*, to which, where it has connected itself with a saint (the sheikh Shatli, on the western border of the desert near Esneh), pilgrims make journeys of many days' length, from east and west, in order to rub their limbs with it.

Edible fruits also are not quite absent from the flora of the desert, but the date-palm is no longer found wild anywhere here, though in many places it has become wild (in the Wady Gemâl). In place of it the hegelig-tree (Balanites) offers in many places its date-like fruits, a fig-tree (*Ficus pseudocarica*) grows on the slopes of many of the mountains, but not on their bare and waterless tops, as the wonder-loving fancy of the natives of the towns believes. The juicy green caper-bush bears fruits that combine sweetness with the taste of mustard, but a person has to avoid fruits that are not ripe and soft, and also the rind of the fruit, in order to remain within the limits of the agreeable. The traveller in the desert finds the agreeable acidity of the sorrel very refreshing, as also the berries of the thorny Lycium, of the trailing Ochradenus, and of the Nitraria, the latter a coast shrub; the longing palate also does not despise the chewing of the buds of the above-mentioned widely-spread *march*, which, like

cherry stalks, taste of prussic acid, nor does it disdain the milky fruits of the Glossonema, both plants belonging to the family of the Asclepiadaceæ, which produces many other poisons besides.

The coast flora of the desert, which requires the saline vapour of the sea, is peculiar. A celebrated plant is the shora (*Avicennia officinalis*), which forms large dense groves in the sea, these being laid bare only at very low ebb. Ships are laden with its wood, which is used as fuel, and many camels live altogether upon its laurel-like leaves. At many places the coast is widely covered with bushes of the above-mentioned Nitraria, of the Salicornia, Statice, Suæda, and Cyperus, which, collecting the drift-sand, stand always upon a sand-hill formed by themselves. Some of these afford alkaline ashes.

The desert flora is certainly not rich, but one can soon collect in favourable years a herbarium of 100 to 150 species. Altogether 600 species are reckoned as belonging to the Egyptian deserts. They belong, in part, to families which are quite foreign to us northerners, and we find forms for which we look in vain in the Nile valley. In addition to the universally distributed families of the Gramineæ, Compositæ, Cruciferæ, Labiatæ, Papilionaceæ, &c., the foreign families of the Mimosaceæ, Moringaceæ, Zygophyllaceæ, Balanitaceæ, Capparidaceæ, Avicenniaceæ, Asclepiadaceæ, Salvadoraceæ, and Amarantaceæ make their appearance, to which, in the northern portion of the desert, Mesembryanthemaceæ are also to be added. Ranunculaceæ and Orchidaceæ are entirely wanting, and Umbelliferæ almost entirely. Fungi and mosses are rare. Some plants that are annuals in the Nile valley have to extend their roots in the desert in order to reach the aqueous stratum, and thus become perennial (see p. 145).

THE ANIMALS OF THE DESERT.

In spite of the difficult conditions of existence, a considerable number of animals of various classes have chosen our desert as their home. Where plants are, insects are sure to

be found. They are hunted with most success on warm, calm, and sunny days in the spring, which begins as early as January. White and gay-coloured butterflies (Colias, Pieris, and even our common painted-lady), in company with bees, wasps, and flies, flutter about the flowers, the individuals often being in immense numbers, but the species being few; they contribute essentially to increase the idyllic effect of the quiet valleys. The pretty red and white marked *Euprepia pulchra*, a widely-spread southern form, which has even been found in the south of Germany, also often shows itself. Much more abundant are the little butterflies, on plants and about rocks, in the crevices of which they conceal themselves, but especially at night, round the lanterns and the open fires. The caterpillar of the sack-spinner (Psyche) sticks to the acacia-trees, in its slender envelope shaped like a horn of plenty; another with a very short stumpy dwelling is found on the tamarisks.

The Hymenoptera are well represented. Large handsome wasps or hornets (Vespa, Eumenes) leave and enter their nests (which are stuck to rocks) and fly long distances to drink at the springs; wild bees hum about the bushes in blossom, especially the zilla and Leptadeniæ, and slender sand-wasps busy themselves in the sand and around the flowers. Ants attack the unpacked stores; their nests everywhere undermine the caravan road, and, like the holes of the jerboas, cause the camels to stumble. There are not many dipterous insects, but those that do exist are all the more troublesome; the common house-fly follows man and beast to the very heart of the deserts; mosquitos swarm in the larval form in all waters, and those that have wings sing round and sting the travellers camped by night round the wells. A flesh-fly flies continually round the camel, probably on account of the galled places, which are seldom absent. The fly most common on plants is the wasp-like but harmless hoverer-fly (Syrphus).

The Neuroptera, whose larvæ live generally in the water, are represented by numerous and beautiful forms. The dragon-flies often swarm in the greatest multitudes, like

locusts, and often miles away from water. In many rocky basins with clear water the well-known case-inhabiting larvæ of the caddis-flies (Phryganeæ) are also found.

The desert is a highly favourable field for the Orthopteræ, especially for locusts. These are found everywhere, and the whole year round. In certain years, and in early summer, a large species (*Acridium peregrinum*) resembling the wandering locust, but distinct from it, appears in immense multitudes that destroy everything; in other years it appears, like our cockchafer, in smaller numbers, without, however, being entirely absent. Crickets (especially *Gryllus bimaculatus*) in the summer nights or in late spring chirp in such numbers that one might imagine that every stone was singing. The starved-looking Empusa and the predatory praying-insect (Mantis), called by the Arabs the Prophet's mare, may be shaken off bushes.

Hemiptera (bugs, &c.), large and small, are found on and under bushes and trees. The genus Centrotus is represented by insects very common on acacias, on which they stick firmly and look like thorns.

Many spiders are found on bushes, especially on the above-mentioned aromatic Cleome, others hop over the surface of the water; there is also a pretty large bird-spider. One of the most common insects of the desert is the camel's tick (*Ixodes dromedarii*); at every season of the year it runs about upon the ground, especially under bushes, and attaches itself to the anus of the camels as they lie at rest; here it sucks itself full of blood, and then has the appearance of a seed of the castor-oil plant. The poisonous tick (Argas) is also found. In waters the red water-mite may be seen swimming about. Numerous large scorpions live under stones and bushes in the desert, as also in dwellings; and in limestone reefs, especially on the coast, the small book scorpions.

Among the beetles there is a black beetle (*Adesmia cothurnata*) more noticeable than any other; this is the merry-andrew of the desert, often turning itself over, with its somewhat disproportionately long legs, in the air, and it always keeps its back dusty; on account of its quiet and peaceable

life with the scorpions the natives call it the "scorpion's servant." Cicindelas (*C. aulica* and *C. circumdata*) hop about in wet sandy places; and in brackish pools sport water-beetles of considerable size. There are a large number of other coleopterous insects, including Buprestidæ, Carabidæ, Longicornes, Weevils, &c.

Of the large class of Crustacea, which is so richly developed in the Red Sea, there live in the waters of the mountains, especially after rain, only small Branchiopoda (Daphnia, Branchipus, Limnadia), Lophyropoda (Cypris), and on the moist earth in groves of rushes Amphipoda (Orchestia) leap about. The Mollusca are represented in this part of the mountains only by a small water-snail, the cosmopolitan *Melania fasciolata;* of land-snails, so common in the desert near Cairo, there is no trace.

Of reptiles there are plenty of serpents, venomous and non-venomous, small and very large, but it is difficult to collect them, as the Bedouins of this desert are afraid of them, and there are here no serpent charmers, who are so useful to the zoologist. Small lizards (Eremias, Acanthodactylus) are uncommonly numerous; ground-agamas (*Agama Sinaites*), Mastigures (Uromastix), and the mountain-monitor (Psammosaurus) also occur; and geckos (Stenodactylus, Ptyodactylus) glide over moist rocky walls and the sides of cisterns.

Among the birds the great-eared vulture (*Vultur auricularis*) reigns supreme; he wings his way upwards "in the eye of the sun," and often swoops down in dozens where a large supply of carrion, such as a fallen camel, is lying. The small vulture (*Cathartes percnopterus*) is much more common; in the desert town it in some respects occupies the place that the stork holds in parts of the European continent. No one thinks of injuring this harmless and useful sanitary agent, who keeps shore and mountain clear of putrefaction. His favourite post in the town is the highest point of the minarets, to which, like the weather-cock on a church steeple, he gives a picturesque termination. He is by no means shy, but does not venture into the streets of the town. Falcons and owls are constant residents in the deserts, and the osprey

(*Pandion haliaëtus*), that lies in wait for the fishes of the sea, also shows himself in the mountains. The bird that forms a figure in every desert picture, however, is the "Noah's raven," which Noah sent out of the ark. It is a large deep-black raven, similar to the common raven, but a different species—the *Corvus umbrinus*. In the Nile valley (see Chap. III.) it shows itself but seldom. It is not to be shot with impunity, for it is the "uncle" of the black Sudanese, and these demand for their slaughtered relative the indispensable blood-money. (See Chap. VII.) Other characteristic desert birds are the rock-hen (*Ammoperdix Hayi*), the sand-grouse (*Pterocles exustus*), the desert larks (*Ammomanes deserti* and *Calandritis macroptera*), and the stone-chats (especially *Saxicola leucocephala* and *Isabellina*). Wagtails are found at every well, swallows (*Cotyle obsoleta* and *Hirundo rustica*) flit through the tamarisk groves, the common hoopoe may be seen in the very heart of the desert. The rock-pigeon (*Columba livia*, var. *Schimperi*) nestles in the rocks above the caravan-road, and arrives in great numbers from the Nile valley when this is inundated. The courser (*Cursorius Isabellinus*) is half a desert half a shore bird; like many other desert-birds and desert-animals generally, it is "desert coloured," that is, grayish-yellow or isabel-coloured. In winter the sea-shore is enlivened by a multitude of water-birds, among them also flamingoes and giant herons. A fine bird's song is not to be heard in the desert, only the twitter of the stone-chats, the peep of the larks, the croak of the raven, the scream of the birds of prey, and at night the eerie hoot of the owls.

The largest and most formidable among the carnivorous mammalia is the hyena (*Hyæna striata*). It is not nearly so bad, however, as its cry and its appearance; a case of its attacking and mangling men, or even children, is scarcely heard of; since, fortunately, cowardice and a depraved taste have, so to speak, been bestowed upon this wild beast, which might rival the tiger. It prefers carrion to anything else, and when this is not to be had it extends its nocturnal peregrinations to the sea, and breaks open shells for itself. The native

inhabitants universally regard it as a wicked enchanter metamorphosed, and its flesh, hair, and teeth, are things for which there is a great demand. The lynx (*Felis chaus*), which pursues the gazelle, and hisses at its enemies, is less common.

A small species of fox, the *Canis famelicus*, almost white, with a red stripe down its back, and with large ears, is by far the most common carnivorous animal. It forms a connecting link between the common fox and the still more elegant fennec, which represents it in the Libyan desert. Both belong to the sub-genus Megalotus, while the Nile fox is quite different. The fishermen that catch fish on the coast and salt and dry them ashore are never tired complaining of the audacity of these animals, which steal their fish and provisions, though they do not venture into the town. Like the other Carnivora mentioned, this fox spends a nocturnal life. Foxes kept in confinement are morose during the day; they either disregard altogether the food that is set before them, or their pupils contracting to a perpendicular slit do not enable them to see it properly, so that they have to sniff in order to convince themselves of its presence. By day even ducks, fowls, and cats have the boldness to snap up the food of a fox before his very mouth. By night, however, such captive foxes always make a frightful uproar; a fox that had got loose at night was once caught as he had just seized by the neck a duck that had stolen from him during the day. The eyes shine at night like balls of fire. In this country also the fox passes as the very type of all cunning, and fables similar to those in which our Renard figures are in the mouths of all, the part played by him being usually that of a kadi or judge.

The jackal only occurs on the border of the desert next to the Nile valley. The hare also (*Lepus ægyptiacus* or *abyssinicus?*) passes the active part of its existence chiefly in the night; its droppings are found in great abundance, especially in tamarisk groves. The elegant jerboas and sand-mice (Haltomys and Meriones) dwell in burrows that run obliquely into the ground, and by them and the ants the caravan roads are everywhere undermined; they come out mostly by night and gather the camels' dung. A pretty little animal,

but one very difficult to catch, is the daman or Hyrax The only antelope that occurs is the graceful and beautiful-eyed gazelle (*Antilope dorcas*), which is common; it browses by day on bushes, and seems not to despise the thorny zilla. It is not till we go farther south that more species of antelopes begin to appear. The Steinbok (*Capra beden*) is not uncommon, but the Bedouins of this desert have not the courage and the dexterity to hunt it, while the Sinai Bedouins produce specimens to order. On level ground it is said to be easily captured; but when there is danger it makes immediately for the sides of the mountains, where it dexterously clambers about, and can only with difficulty be reached.

Among domestic mammals the one-humped camel plays the chief rôle in the desert; the ass accompanies every caravan as sack-carrier; the horse is not employed. Sheep and goats are kept and pastured by all the Bedouins. All Bedouin settlements have dogs, which are generally red-haired and make faithful guardians.

THE NATURALIST IN THE DESERT.

We have crossed the desert from west to east, but must restlessly continue to wander, in order to reach our distant goal as soon as we can. But we now perceive how rich in natural treasures it is, and these must be sought for and collected on special scientific tours. It were best, of course, if in such unexplored regions as our desert still continues to be the division of labour could be introduced, the geographer observing exclusively his routes, the geologist his stones, &c. But when one is alone he has to turn his attention to everything, and that also has its charm; and it is more easily accomplished in the desert than elsewhere, since there is not a confusing and overwhelming number of objects to be observed. Thus regions apparently so wearisome and monotonous become a field of perpetual activity, and, so far as results are concerned, of rich enjoyment. Here the route must be laid down with chronometer and compass; there is a plant which has never been seen or collected before; there

we see a quadruped or a bird that call the gun into operation, a bush that must be shaken for insects, a swarm of insects, a lizard that must be caught with the hoop-net, a peculiar mountain formation, or a layer rich in fossils, where hammer and chisel have to work; or a sketch is to be drawn of a landscape, a Bedouin, or a tent. Lastly, as there is not time on the march to make observations of any completeness, it may be recommended as an excellent plan to select certain places as central points, from which one can at leisure investigate the surrounding country, now for one scientific object, now for another. The best season for this region is the spring, from the middle of February, or even from January, to the middle of April. Above all, years are to be selected in which life has been awaked by rain. In addition to all this labour, baggage must be prepared, which is as necessary to the shortest tour as to a great expedition. For, however simply one lives, he will require large supplies of provisions for himself and servants, water-skins, a cooking apparatus, wrappings and a carpet for the night, and a camel to carry the whole. As driver and guide an Ababdeh Bedouin is hired, who may also act as attendant and assist in collecting; it is still better if one has a special servant who understands hunting and collecting, and can set the traps. The investigator had better walk the greatest portion of the way on foot, since it is not easy to make observations on camel-back, still less to write. At intervals he will get tired out, and then he can rest on the back of the camel.

As one of the most widely useful implements for a journey in the desert, the butterfly hoop-net cannot be too highly praised. Besides its original purpose, namely, for catching winged insects, it may also be used to receive them when shaken from a bush, as a net for water-animals, serpents, and lizards; also as a sunshade, and thrown over the head as a protection for the eyes against the strong glare, against sand-storms, and against bitter winds, at night as a mosquito net, in drinking wormy and muddy water as a strainer, also as a sack for provisions that require sifting (lentils, for instance), and as a flagstaff for the scattered company. Lastly, it lends

the traveller the nimbus of a pious pilgrim, since these are in the custom of hanging out white pennons behind their seat on the camel.

The day's labours being over, towards evening a spot is selected for the camp, after which supper is cooked and eaten with huge appetite. After supper the company seat themselves in a circle under the wonderful star-bespangled heavens, or in the moonlight, warming themselves at the fire when it is cold, and now, puffing away at his pipe, one man retails all the wonderful stories he has, another strikes up a song, the Bedouin blows his shepherd's flute, or executes a war-dance for our amusement.

III.—INHABITANTS OF THE DESERT.

HISTORY OF THE DESERT.

These mountains were inhabited and visited by men from the very earliest times. This is attested by monuments, inscriptions, and antiquities of various kinds, as well as by the accounts of the ancient geographical and other writers (Strabo, Ptolemy, Diodorus, Agatharchides, Pliny). The inscriptions at Hamamât (see above) go back to more than 2000 years before our era (sixty-fifth dynasty); Ramses III. of the twentieth dynasty (thirteenth century B.C.) opened here a new road by which the treasures of India and Arabia (the land of Pan) were brought by way of Koptos to Egypt. Under Ramses IV. 8368 labourers and officials (among them also Hebrews) were daily employed in the "Bechen," that is, the modern mountains of Hamamât, in quarrying the fine stone of the locality for the works of art at Thebes, perhaps also in mines, and they were supplied with provisions from the Nile valley, the provisions being drawn in carriages by oxen (so that there were no camels!). We find here, too, inscriptions of later date containing the names of the Persian kings. These mountain roads became of still greater import-

ance in the time of the Ptolemies—to some extent also of the Romans—when the great emporia of the Red Sea, Philoteras, Myos Hormos, and Leucos Portos, were in their glory. The stone camping-places standing at intervals, constructed of rough blocks without mortar, as well as the watch-towers on the mountain peaks, probably belong to this period, although inscriptions seem to be wanting. The ancient Greeks called these erections *hydreumata*, the Arabs call them *wekalat en-nusara*, that is, "caravans of the Christians." Many such are found also in other localities in the mountains, especially at watering-places; a number of these ruins are probably to be regarded as camping-places of miners. In any case, this desert was very much frequented in these ancient times. In the later times of the Ptolemies, when Berenice became the principal port, the chief route ran more towards the south, also, however, terminating at Koptos. In the early times of Islam, too, the route for both trade and pilgrims ran more southwards, to the once important place Aidâb, near Suakin; in the eighth century of the Hejra (fourteenth after Christ) this road was entirely given up on account of the plundering of the caravans by the Bedouins, and this caused the downfall of Kûs, where the road terminated, and which rose to importance in place of Koptos or Koft. The Kene-Koseir route next rose into notice, especially since the conquest of Egypt by the Turks in the sixteenth century. The French held this road in their possession for several years. In the time of Mohammed Ali it was much frequented by pilgrims, and by caravans with corn for export; at this time it was also the overland route for the English to India. After the opening of the railway to Suez, and that of the Suez Canal, the importance of the road has continued to decrease, and now it is scarcely used except by pilgrims from Upper Egypt to Meccah, and a few corn caravans. We must also add that the caravan route above described is not the only one; on the contrary, the mountains are intersected by a number of such, all more or less frequented, and generally following the valleys and easier passes, not to mention a number of smaller foot-paths and bridle-paths.

THE ABABDEH.

The inhabitants properly belonging to our desert are Nomads or Bedouins; they call themselves *Abâbdeh* (sing. *Abâdi*). This name occurs very early; the inhabitants of the coast range on the western shore of the Red Sea (corresponding to the locality at present inhabited by the Ababdeh), being named *Gebadei* even by Pliny (A.D. 70). The nomadic peoples inhabiting these coast mountains south to Ethiopia are also called Blemyes or Troglodytes by the ancient geographers, those dwelling on the sea, in particular, being named Ichthyophagi. The old Arabian geographers and historians, such as Makrizi, call them *Bedya*, a name which, as *Bugaites*, even occurs in an ancient Roman inscription, and at the present day is especially applied to the Bisharin, a race closely allied to the Ababdeh, and dwelling south from the tropic. These peoples accordingly have inhabited the same country from the earliest times. The Ababdeh themselves maintain that they are descended from the *Gin*, that is, a kind of mountain-spirits, the statement probably being the same as if they called themselves autochthones.

In appearance, manners and customs, and dress, they are entirely distinct from the *Semitic Arabs* proper who inhabit the northern portion of the desert, from Syria and the peninsula of Sinai to the southern borders of Middle Egypt. These are here called *Mâaṣa* (also *Atuni* or *Hauadât*), and exhibit the genuine Semitic-Arabic type—a clear, pale colour of skin, thin, somewhat longish face with non-projecting cheek-bones, broad and lofty forehead, thin and sharply cut nose, strongly curved eyebrows, small mouth and small lips. They shave their heads, wear a turban or a parti-coloured head-cloth, never go naked, and possess firearms and short swords.

The Ababdeh, however, who in former times lived in constant feud with these Mâasa, have a skin varying in colour from deep-brown to black, along with an almost Europaeo-German expression of countenance, and are, generally speaking, a race possessed of extraordinary beauty and noble forms.

All travellers give great prominence to this impression, which is certainly heightened by the long waving hair of the head, whereas elsewhere in these regions only heads rendered artificially bald are to be seen. The Ababdeh are dolichocephalic and orthognathous; the face is a fine oval, not so long as among the Arabs, the eyes large and fiery, the mouth and lips neither large not small, the nose straight and rather short, broad and blunt, than long. The neck is long and thin, the ear small and roundish, the hair naturally straight or curled, but not woolly; it is artificially twisted into cork-screw ringlets, and worn long and uncovered. In these peculiarities they agree with the Bisharin, Nubians, and Abyssinians, who dwell farther to the south, and to whom also the general name of Ethiopians is given; they are not to be confounded with the negroes, from whom they are as different as from the Arabs and Egyptians. The Bisharin very closely resemble them, but are somewhat more prognathous, as well as more muscular, and have also a fiercer expression than the slim and gentle Ababdeh; they wear their hair also, but shave the moustache, while the Ababdeh let it stand. The Bisharin and Ababdeh are very closely related, and along with some other races dwelling farther to the south are classed together as "Bedya."

An Ababdeh Man.

The long black hair, which is twisted into large curls like those which the painters give to Christ, or plaited into braids, flows down to the shoulders and back, while on the front part of the head a short and very curly tuft projects. The hair is the pride of the Ababdeh youth and man, and the object of the most careful, even effeminate attention, as is easily seen by the curling-pin stuck in the hair behind or at the side. This is also evidenced by white lumps and smears of grease, which, not being properly rubbed in, appears between the

raven-black plaits, and is often carried in such quantities that the hair seems as if powdered. A small soapstone cup,

Ababdeh Boys.

in which the by no means odorous pomade is worked up, is indispensable to the travelling-bag of an Abadi. This luxuriant crop of hair he always wears without any covering, as well in the glare of the subtropical summer sun as in the chill storms of winter. The Bisharin, the Abyssinians, and a portion of the Nubians have the same practice. The heads of very small boys are first prepared by the razor, small tufts being left for the later national adornment. Sometimes the excessive increase of vermin renders it necessary to give up the ornament of manhood for a time, and the graybeard must cover his baldness with a quilted cap of linen.

Small Ababdeh Boy.

DRESS OF THE ABABDEH.

For clothes the Abadi wears besides the loin-cloth a long white coat or shirt (never blue as among the Fellahin), and in winter perhaps also a light coloured and generally striped woollen mantle. When he becomes too hot or uncomfortable

he even wanders through his lonely rocky valleys without a coat, quite naked. His naked body is protected from the heat of the sun by the brownness of his skin, which is generally smeared with fat for the purpose, but still more by custom, since he generally passes his childhood in perfect nudity. In other respects he has already, both in dress and customs, adopted much from the Fellahin; the Ababdeh of former times, like the Bisharin of the present day, wandered about half naked, clothed only with a leathern apron and wrapper, and without a shirt. The male Abadi is also fond of wearing a ring in his ear. He walks either barefooted, his feet being insensible to the stones, or in sandals; in his hand he often carries a lance; round his upper left arm a short knife stuck in a sheath is always fastened; and sometimes also he girds on a long straight sword. He seldom carries a shield now-a-days and never a gun. These weapons are more for show than for actual combat; he likes to appear as warlike as his forefathers. At the present day, however, perfect peace and security have long prevailed in his country. Occasionally he may also kill some game, but the noble art of the huntsman is by no means his forte.

Ababdeh Woman.

The women clothe themselves with a white cloth drawn under one or both armpits, so that one or both shoulders and the arms remain free, and over this a large outer wrapper, also generally white, which can conceal the whole form; in winter, instead of this a mantle of brown woollen stuff is also worn, as among the female peasantry of the Nile valley. They plait the hair from the crown down into many rows of plaits, the foremost of which, in front of the ear, has more freedom of movement than the others. Like all other women they believe that they are not attractive

without ornaments; they wear ear-rings, necklaces, buckles on arms and feet, and above all the inevitable nose-ring, like their camels, an ornament they consider charming. Instead of gold, silver, and pearls, however, their poverty compels them to limit their ornaments to brass, coloured glass, and shells. The smaller girls often wear the *raad* or girdle round the loins, as is customary among the negresses, and nothing else, except that round their head and neck they hang white shells and glass beads, which show wonderfully against their nut-brown skin. An almost idyllic scene meets the eyes of the traveller when, in wandering over these mountains, he suddenly, in some lonely valley, comes upon a few boys and girls of the Ababdeh in their almost paradisiac nakedness tending their sheep and goats. Though shy at first they soon gain confidence, and give the best information regarding the road and every little plant. Among the Ababdeh women, classically fine, elegant, and slender figures are often seen, seldom bulky, but in old age usually as lean as a rake, and on overcoming their first shyness they allow themselves to be looked at and spoken to, and they are less fond of playing bo-peep than the women of the cultivated regions and the towns.

OF THE ABABDEH IN GENERAL.

The country that the Ababdeh possess is the mountain desert between the Nile valley and the Red Sea, as far as it corresponds to Upper Egypt, accordingly from the latitude of the town of Siout to the Cataracts of the Nile or the tropic. They are also, however, scattered over the Nubian desert to near the Soudan, and in the Nile valley itself a number of them have settled in villages of their own and practise agriculture. The whole number of this people may amount to 30,000. They are under a chief of their own race, who again nominates the sheiks for the principal localities. The dignity of chief is hereditary in one family according to patriarchal law, that is, it passes to the eldest of the family; the sheiks nominated are quite dependent on him and may

be deposed. The grand sheik is a vassal of the Viceroy of Egypt, but has no tribute to pay; on the contrary, he receives something, viz. a certain share of the road dues, which the Egyptian government levies on the caravans.

Internal quarrels among the Ababdeh are arranged by the family elders, by those under-sheiks, or by the grand sheik. The Egyptian government takes no part in them, nor does it raise any taxes or levy soldiers among the Ababdeh. On the other hand, the prince must pledge his life and property for the security of the desert roads; he must when required provide camels and guides for payment, but sometimes also without it, and he is bound to live in the Nile valley; he is thus to be considered as a kind of hostage. This hostage system was first introduced here and among other subjected Bedouin peoples by the great Mohammed Ali, and it has kept its ground. The consequence of this permanent state of war is profound peace and absolute security in these inhospitable tracts. Before his time these and all other Bedouins were much dreaded robbers; during antiquity and the whole of the middle ages they made inroads from time to time into the cultivated territories, and the merchants and pilgrims (as late even as the time of Burkhard) only ventured to pass through the desert when armed and collected in large caravans. All this is now quite different, and now even articles that have been lost may be recovered on giving intimation to an Ababdeh sheik.

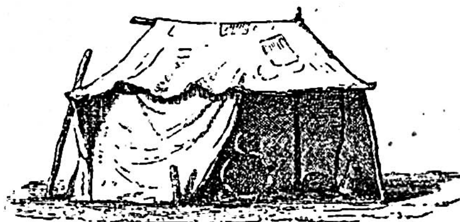
An example of how desert justice is administered is told as having occurred within the last few years. A camel which had strayed from some caravan and was laden with fruit was found by a Bedouin in the Nubian desert, the important trade routes in which are also intrusted to the Ababdeh. As in duty bound he immediately brought it to the nearest station, uninjured, with all its load on its back, but not without peeping in to see what was in the sack it carried. This was noticed, and the Bedouin was condemned to death for his curiosity, "for," said the sheik, "if there had been gold in the sack you would have stolen it and not brought back the camel."

The Ababdeh prince must also, however, have something to live on, the more so that he is no longer externally a Bedouin, but has become entirely Egyptian. A regular system of taxation cannot be carried out among nomads, and accordingly the Abadi must contribute a considerable mite for his chiefs from everything that he brings to market and from payments that he receives for his services as guide, for conveying goods by his camels, &c. Even that seems not to be sufficient, since from time to time a sheik of the second or third rank, on commission from the patriarch-prince, undertakes a little trip to the chief settlements of the Ababdeh and into the desert, and the good shepherd carries away with him whatever seems to him good among the possessions of his flock, such as camels, sheep, or goats, and also lays claim to be honourably and hospitably received by those of the same rank as himself. The approach of such an expensive visit or *razzia* is, to be sure, soon well known throughout the mountains, and the Bedouin withdraws with all his goods into the interior, so that the sheik only finds abandoned stations. At such times no Abadi is seen far or near, in the markets no sheep, no wood, no fodder is to be obtained; occasionally, however, some ignorant Bedouin or other, or one who has been urged by necessity, is laid hold of, and he must pay for the others.

DWELLINGS AND HOUSEHOLD MATTERS.

The Ababdeh have no tents, but only huts, and these of the most wretched sort. These consist of a few poles, round and over which old straw mats are stretched to form the walls and roof, which is generally sloping. The whole is of a longish quadrangular form, one of the long sides, namely that turned away from the road, being open or partially closed by a hanging piece of cloth, and forming the door. The internal space is generally only two or three paces long and about four feet high, so that a person can only sit or lie inside; but indeed, the inhabitants of these regions generally cannot imagine that there is any pleasure or domestic comfort in standing.

Into this the family creep, for in every hut there is room for a pair to live comfortably, together with a swarm of children. An Ababdeh settlement generally numbers only four to eight



Ababdeh Tent.

such huts, with as many families. It is only in a few settlements, such as the desert village of Laketa (see above), which contains about fifty dwellings, in the villages of the Nile valley, in the Ababdeh suburb of Koseir, the inhabitants of which have partially given up their nomadic life, that we see hole-like houses of clay or rough stones, in the style of those of the Nile peasantry. Many dwell also at times in natural caves, and are therefore "Troglodytes," as the ancients called them. Dwelling in these caves is here somewhat dangerous on account of the serpents. In the caves are found remains, such as cinders, ashes, blackened stones, &c., which generally show them to have been tenanted, at least temporarily, by men. The caravans often stop at these for their siesta, and perform their cooking in the inside, whence the sun and wind are excluded. It is possible that if excavations of sufficient depth were made traces of the ancient Troglodytes might be found.

Other household appliances are quite in keeping with the wretched abodes. They consist of a few cooking utensils of clay or soap-stone, skins for water and milk, leathern buckets, drinking-cups of wood, a wooden or leathern bowl for eating out of, a few grinding stones, a straw mat or a coarse woollen carpet, and, for a fire-place, a few stones picked up at random. Everything has the provisional, nomadic character. For cutting they make use only of an iron knife; they do not

use flint (of which their limestone mountains are so full) for this purpose, employing it only to strike fire.

A LIFE OF HUNGER.

The food of the Ababdeh is chiefly milk and durra. The latter they enjoy either raw or roasted, or in the form of unleavened cakes baked on a glowing fire of camels' dung. The few fruits that the desert affords are also made the most of. They seldom allow themselves to indulge in flesh meat, since they sell their cattle, and are not great hands at hunting Any wild animals that they can get hold of, however, they consider dainties, including hyenas, hares, jerboas, foxes, and gazelles. Those dwelling on the coast live chiefly on fish and molluscs. The better sorts of these they sell fresh or dried, and content themselves with those that are despised by other people, and are always easily caught, even in the time of storms; coffer-fish, sea-eels, rays, globe-fish, wrasses, crabs, and polyps. The ground round an inhabited or a deserted Ababdeh dwelling is always covered with the remains of these, especially with the heads of the globe-fish (Tetrodon), which are considered very poisonous, and are therefore always thrown away. These denizens of the sea are generally simply roasted on the open fire. Yet the Ababdeh are not in such a wretched state as were the ancient Ichthyophagi, according to Strabo. "These," he says, "roast the fish at the sun, and tread the roasted flesh into cakes; the back-bones, however, they gather together, and when they cannot fish, as for instance during storms, they eat these bones stamped into cakes; the fresh bones they suck. And when they suffer from thirst, they travel with their houses journeys of some days' duration to the wells, and flinging themselves on the ground gulp down the water like cattle till their bellies are swollen like drums."

The modern Ichthyophagi or coast Ababdeh catch their fish generally with a spear, on reefs laid bare at ebb tide; some also catch them with nets, especially the ring-net; they do not know how to use the hook and line. They do not

possess any kind of vessels, not even fishing-boats, and on the whole are not fond of venturing on the sea. Their territory is altogether on *terra firma*, including the coast reef. Their neighbours, the 'Bisharîyeh, on whose coast are many islands, make use of a raft in order to reach them.

Such being their scanty fare it is not to be wondered at that the Abadi is always hungry. When a caravan is doing its cooking some son of the desert always makes his appearance, having smelled it from a distance. He does not beg, but regards the persons eating with such a dog-like and piteous air that they cannot but invite him to partake, especially the Moslim, who when he eats can never allow a stranger to stand without giving him an invitation. And when the camp is pitched beside an Ababdeh settlement the least signal brings the hungry and naked Bedouin children bounding up, who, with amusing eagerness, stuff their mouths with the left pieces of bread and meat offered them, and for which they never beg. As soon as the camp breaks up hungry creatures of the desert of all classes forthwith fall upon what it has left; the children of men vie with the dogs in gathering the bones and crumbs, with the sheep in scraping together the straw, with the pigeons in picking up the grains of corn, with the ravens in making use of the balls of dung. The Ababdeh are also able to use, as their daily beverage, the worst water, a pure solution of Epsom salts, when good water is too distant.

EMPLOYMENTS.

The chief employment of the Ababdeh is flock-keeping and camel-driving. They keep camels, goats, and sheep, but never horses or cattle. Some also possess an ass, and they all have a dog. Pasture is only available for a time, when winter rains have fallen, and called the vegetable germs into life; in the dry season, and in dry years, the herdsman must often make long journeys in the mountains in order to find pasture; nay he must then diminish his herd, and is even obliged to hire himself out for a time in the Nile valley as an agricul-

tural or other labourer. But when his desert valleys are once more verdant he is sure to return again to his beloved fatherland. The value of the plants of the desert as nutriment is certainly small, and, accordingly, the cattle of the Ababdeh, like the people themselves, are lean and hungry, notwithstanding that they browse continually the whole day and the night too. In making a journey with an Ababdeh camel, one would require to take into consideration the delay caused by its almost constant eating. The water caravans from Koseir to a well 10 leagues distant require about thirty hours, those of the Ababdeh from two to three days. The Ababdeh camels pass no bush without stripping it, and they are not disturbed in doing so, since they get nothing else to eat, while the camels of the Fellahin in journeying through the desert, besides being allowed a little pasture, are always fed at camping time with straw and the nourishing beans. The Abadi at most scatters before his camels a sackful of dry zilla stems which he has collected in the course of the day on the route. The camels of the Ababdeh are, therefore, always lean, and not adapted for carrying heavy loads, but for the same reason they are excellent and celebrated runners. A good running camel, over which it is the custom to hang a splendid sheepskin as housings, and a double saddle-bag with long tassels, performs a journey of 40 leagues in twenty to thirty hours, including the necessary stoppages. All the Ababdeh are excellent dromedary riders.

Some of the Ababdeh that live on the coast are called Shora Ababdeh; they have settled at one of the well-known shora groves (see p. 240), that grow in and close to the sea, and their camels and other live-stock feed the whole year round almost entirely on the leaves of this tree, while they themselves cut it down and sell its timber. Like the other coast Ababdeh they also catch great multitudes of fish of medium size, especially parrot-fish, cut them up, salt them, and sell them. Fish so prepared form a not unimportant article of trade. Ababdeh who live a more settled life also keep pigeons and fowls.

The Ababdeh derive their livelihood from converting the

products of their country into money, as well as from stock rearing; in particular, they supply excellent fuel in the shape of timber, brushwood, camel's dung, and excellent charcoal made by themselves from acacia wood; they are, therefore also charcoal burners. They also collect fodder-plants and medicinal herbs, such as senna leaves, colocynth, a kind of wormwood, and gum Arabic on the acacias so common in the desert. Others support themselves by carrying water on camels or asses. In Koseir for every camel-load of water, which consists of six goatskins, and which, as already mentioned, occupies them three days, they receive, according to the market price, which varies with circumstances, from 1*s.* 6*d.* to 6*s.*

The people dwelling on the Nile are now more frequently employed than the Ababdeh as camel-drivers in large caravans, but according to the accounts of travellers the Ababdeh seem formerly to have mainly conducted the traffic. Some live close to the caravan route, and besides keeping stock, earn something from the services of various kinds which they render to caravans passing by or camping near, fetching water, branches, and wood, watering the camels, loading and unloading, &c. For these services they receive from the camel-drivers a few handfuls of corn or durra. They are also placed here as road-watchers, and are said to receive payment for this duty from their chief, but they do not appear to get much. If there is a cessation of the traffic (which consists on their roads chiefly in the export of corn from Egypt), even the road-guards break up their huts and remove somewhere else. A few Ababdeh are attached as dromedary riders to the stations of the carpenters who have to keep the *desert-telegraphs* in repair. For these carpenters the government has already erected stone-dwellings of a somewhat more solid character. Lastly, many live as camel-drivers in the service of others as masters, or they accompany through the desert herds of cattle bought up by merchants, or are fishermen and shell-gatherers by profession. A considerable number, as already mentioned, have settled in the Nile valley and practise agriculture. There also they prefer to stick to

each other, building villages for themselves, and not mixing readily with the Fellahin.

Their trade with the settled country is carried on by money, but among themselves more by barter; the women in the interior accordingly scarcely know the value of money, and when one wishes anything from them, such as wood or milk, they do not give it though offered a great deal of money, but readily give it for a piece of bread, some corn, or a piece of cloth.

INTELLECTUAL QUALITIES AND CAPACITIES.

As the Ababdeh, looking at their bodily characteristics, are a well-built race but bear the stamp of hunger, so also from the mental point of view they are, like most races living in a state of nature, very intelligent within the circle of their wants and conceptions, but at the same time "poor spirited" (*fakir*), as the Egyptian expresses himself, that is, in the good sense of the word, not stupid, but well disposed and harmless. According to the accounts of older travellers (Burkhard, Bruce) they were formerly the opposite, being represented as "dishonourable, faithless, vicious." Either they were confounded with the Bisharin, to whom these three words apply only too well, or it is only since that time that their character has been so much improved. More recent travellers cannot sufficiently praise them as peaceable, honourable people, rather too shy and timid. Considering their poverty they are not to be blamed if they eagerly lay hold of a gift offered them, but they *do not beg*. Their country is as yet too little traversed and corrupted by Europeans, who accustom the natives to beggary, as the Fellahin are accustomed to backshish. That they do not, like other Bedouins, practise hospitality towards strangers is not to be wondered at, since they have scarcely the barest necessaries of life for themselves. If misfortune has thrown in their way a person who has lost himself or been shipwrecked, and who in want of food and assistance has been forced to have recourse to them, they do not certainly rob or murder him, but they give him nothing

to eat unless he has money in his pocket or can give certain promise of payment. When, on the other hand, a man of rank belonging to their tribe comes to them, pride and honour demand that a member of their herd shall be offered up to show their regard for him: nay, if the guest comes exactly at the time when a sheep has been killed for the family, yet a second must fall for him—the guest.

The Abadi has a most accurate knowledge of his country and its products; he knows every little plant and every animal by name, and all the paths for a wide circuit round; and their skill in following a trail is celebrated and is really extraordinary. In the arid desert, where there is no drift sand, the trail remains impressed for a long time on the ground. An animal that has run off, a man that has fled or lost his way, is sure to be brought back by the Ababdeh in a short time; wild beasts are pursued up to their holes; even in inhabited cities they can point out the trail. A few Ababdeh specially skilled in this art are even kept in the pay of the government in order, in case of a crime, to track out the perpetrators, and the results are often wonderful. The people even relate that the parties really guilty have been found by a comparison of the footsteps of a large number of accused persons.

Arts and manufactures there are naturally none among these Bedouins, except that rude utensils are made, and vessels carved out of soap-stone, serpentine, and wood.

Sickness is left to the healing power of nature, or treated with herbs growing in the desert. Of small-pox these Bedouins have such a horror that they pitilessly expose persons affected with this disease, and only throw to them every day the necessary food and drink until they die or recover.

LANGUAGE.

The language of the Ababdeh, strange to say, is the Arabic. When they speak with strangers they always—even the children—express themselves very well in Arabic. Among themselves, however, they speak a jargon almost unintelli-

gible to strangers. Many words and expressions in it are decidedly Arabic, although twisted about so as to be unrecognizable; others, however, as well as many names of places, seem to belong to a language of their own, which may be a branch of the Bedya tongue spoken by the Bisharin, so closely allied to them. Strangely enough they make their language a matter of secrecy; the Abadi cannot be brought to speak of it. The singing or interrogatory tone, which the Ababdeh always employ when speaking, is peculiar. It is also reported that the Ababdeh sheiks have a kind of secret language, which, however, is a modern invention; it is said to be formed by the insertion of the consonants *k* and *r* into words already in use; for example, they turn the Arabic *yôm*, day, into *arkelyerkom*, *gebel*, mountain, into *gerkeberkel*, just as when boys we made a kind of artificial language for ourselves by inserting *rf* between syllables, as *gorafold* for gold, &c.

RELIGION.

The religion of the Ababdeh is the Mohammedan, but little more than nominally so, its rules being very loosely observed. These dwellers in the desert, indeed, never perform the first duty of the Moslim, the well-known prayer in a bending attitude. Even those living among other Mohammedans seldom go to the mosque. A pilgrimage by an Abadi is almost unheard of. As already mentioned he eats without religious scruples very unclean meats, such as foxes, mice, and hyenas, but only if they have been duly slaughtered beforehand. For him to fast at Ramadan, as will be understood from what we have said above, is a thing impossible. If an Abadi is asked whether he is a Mohammedan, he often answers, "No; I am an Abadi," of course meaning this more in a national sense, and in contradistinction to Arabs and Fellahin. Some make themselves known in confidential conversation as freethinkers, and hold that at death everything is over; but they openly reckon themselves among the believers of the Prophet. Their chiefs, who always live among the Moslimin, are generally even bigoted adherents of the Prophet. They have also

adopted many usages from the Moslimin, and accordingly there are saints, whose tombs are distinguished with pennants, and they practise circumcision, divorce, early marriage, and polygamy like other Moslimin. Some even rig themselves out with a rosary, which, however, serves rather for a tooth-pick than for counting off their prayers. For it must be mentioned that to the rosary is attached a piece of wood from a branch of a tree growing in the mountains (*Salvadora persica*), which is highly thought of as furnishing excellent tooth-cleaners. An implement of this kind (*misvak*) is well known to have been among the objects left by the Prophet, and this explains its position on the rosary. While the orthodox Moslim is always superstitious this is not the case with the Abadi, at least he does not believe in spirits, and makes game of the camel-drivers of the Nile valley, who do not venture to encamp by night in a desert valley which is reputed "uncanny." The Abadi fearlessly wanders quite alone both by day and by night in tracks where there are no men, but a Moslim would not venture to do so. For this reason the Moslimin accuse the Ababdeh of practising the black art; they are said to be able when at a distance to bring moving objects to a stand-still; their glance is said to be very dangerous, &c., but this the Ababdeh themselves will by no means allow.

FAMILY LIFE.

The family life is not essentially different from that of the Moslimin, since, as already mentioned, they have the same laws and usages, including early marriage, divorce, and polygamy. The last, on account of its expensiveness, is seldom practised except by the sheiks. The violation of the marriage vows, so rare among the Bedouins, sometimes occurs; the Troglodytes who love in secret meet each other in the stillness of night, in lonely mountain gorges and caves miles away from any human dwelling. This, however, is a risk to run all the greater that the injured party is sure, by means of his skill in tracking, to discover the betrayer. On the

caravan route and on the outskirts of the larger villages there are even a few Ababdeh prostitutes.

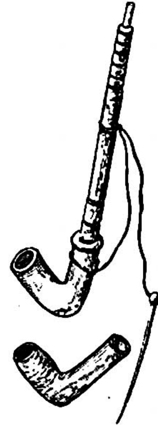
When a woman has been married she must never see her own mother afterwards. The young husband always removes far away from the parental family of his bride, chiefly in order *to avoid his mother-in-law.* This fear of a mother-in-law is spread among many peoples; it may be traced throughout the whole of Africa, America, and Australia, and perhaps naturally arises from the relationship itself, being expressed also in our proverb, "Mother-in-law—tiger-mother," or "Devil's lining."[1] Among the Ababdeh, too, the brothers and nearest relatives of the wife must not eat with her after the marriage.

WEDDING FESTIVITIES.

When a young Abadi is about to marry, which he is always allowed to do whenever the first down appears on his cheeks, for a week before the marriage, at least in the larger settlements, preliminary festivities are carried on every night, without the Koran, but with drums, singing, and hand-clapping. Here the Ababdeh execute their weapon dance in full equipment, that is, naked and armed with shield, lance, and sword. A dancer or two warriors step into the circle, swing their spears, and make a number of leaps and bounds; the dance is much more violent than the similar dance of the Egyptians, with its studied grace. The dancer often rushes at a spectator, and giving a loud shout makes a thrust at his breast with his lance or sword, to which the latter gives for answer, "Abadi." The former then retires. According to the statements of travellers, others sing a national song, in which they praise the bold and celebrate the Ababdeh race, while joy, fear, suffering, or anger is depicted in the features of the spectator. Others, using a double-toned reed flute, play for hours on end tunes impossible to imitate; or the dance of veiled women, already

[1] *Schwiegermutter—Tigermutter oder Teufelsunterfutter.*

described (Chap. III. p. 193), is executed, the whole being done in the darkness of night, only very partially dispelled by an open fire, at which the drums are occasionally dried when they become wet with the dew. Round the fire sit the sedater men and smoke their serpentine pipes, which have the form of a short tube bent at a right angle and without a wooden stem, or are of the usual form of a pipe, with a heavy massive bowl of serpentine.


Ababdeh Tobacco Pipes.

FUNERALS.

When the last hour of an Abadi has struck loud lamentations resound through the mountains; the body is buried with usages similar to those practised by the Moslimin, and over the grave stones are heaped up, some of the higher of them pointing towards Meccah. The ancient Troglodytes are said to have thrown stones at their corpses, laughing and rejoicing all the while, till they were covered from view, and then to have set a goat's horn on the top.