

as much as 11 feet in length—is probably the produce of the midrib of the leaf of a species of banana, but this is doubtful. Among the few plants of the Pariwara Islands I may mention *Pandanus pedunculata* and *P. spiralis*, a *Cleome* with yellow and a *Pongamia* with purple flower, *Convolvulus multivalvis*, *Evolvulus villosus*, *Guettarda speciosa*, &c. ; but the arid soil there supports only a very scanty vegetation. Sago-palms of great size were frequently found floating in the neighbourhood of Redscar Bay, probably grown upon the banks of the large river seen to disembogue there, and groves of cocoa-nut trees were seen everywhere at intervals along the whole of the S.E. coast visited by us.

3. *Mammalia*.—Several pigs (*Sus Papuensis*) were brought off to us by the natives, and in a similar manner we obtained some live specimens of a rare and singular opossum (*Cuscus maculatus*).

4. *Birds*.—We are aware of the existence in the southern parts of New Guinea of a species of cassowary, and at least one kind of bird of paradise, having seen the plumes of these birds worn by the natives as ornaments ; and some preserved heads of a hornbill (*Buceros plicatus*), strung together as a necklace, were obtained at Brumer Island.

6. *Fishes*.—The muddy nature of the bottom at our various anchorages off the coast of New Guinea seemed to be unfavourable for fishes, as scarcely any were procured by us, although the neighbourhood of the coral reefs there is probably as productive of fishes as we found it in similar localities in the Louisiade Archipelago.

Note.—In a letter dated Singapore, May 2, 1851, Mr. Windsor Earl informs Admiral Beaufort that “A Narrative of the late Dutch Expedition to New Guinea has just appeared. It is, without exception, one of the best accounts I have ever met with ; full of information and pleasantly told. The expeditionary vessel was on the coast of New Guinea when the ‘Meander’ passed along on her way to Sydney. This, with poor Captain Stanley’s observations on the South Coast, and M. Modera’s on the West, will make us nearly as well acquainted with New Guinea as we are with Madagascar.”—ED.

III.—*Extract of Letter from Rev. Dr. LIVINGSTON, under date Kolobeng, 24th August, 1850. Communicated by the Rev. Dr. TIDMAN, Foreign Secretary of the London Missionary Society.*

[Read Feb. 10, 1851.]

MRS. LIVINGSTON and Mebaloe, the native teacher, had joined in my desire to visit Sebitoane ; and Sechele, our chief, having purchased a waggon, the first service he wished it to perform was to place him in presence of the man who, in former years, when assaulting the Bakwain town, ordered his survivors to be sure and

spare the lives of the sons of Mocoasele (Sechele's father). The attack having been made in the dark, Sechele was badly wounded, and lay insensible till the morning. When recognised, Sebitoane gave orders to his doctors to attend to the wounds, and subsequently restored him to liberty. Had we succeeded in reaching Sebitoane, the interview between the two chiefs might have been interesting. Our chief sent a present to his former benefactor last year, but his messengers were prevented going in the same way that we were. They have been more successful this year; so, though we have not been able to go as far as we intended, we are thankful to hear that the way has been opened by them.

Having no apprehension that Sekhomi would throw obstacles in our way, we visited his tribe both in going and returning. As he is an old friend, I apologised for passing to the westward of him in our last trip, on the ground that, as I knew he was very much opposed to our finding a passage to the Lake (he having twice refused our request to pass), I had determined to go in spite of him, and yet without contention. He replied, "U'ntsitle, mi kia boka" (You beat me, and I thank you, or acknowledge it). His entire conduct was the opposite of what it was last year. We had more intercourse with the Bakalahari, especially with the inhabitants of a large village about 40 miles N. of the Bamangwato; and as we passed through their country in April, before the pools, which are usually filled by the rains, are dried up, we suffered no inconvenience from want of water. After visiting the Bakarutse, who live at the lower end of the Zouga, we crossed that river, and ascended on its northern bank. Our intention in passing along the northern bank of the Zouga was to follow the course of the Tamunakle until we reached Sebitoane, but, when near the junction of the two rivers, we were informed by a Bak-hoba chief named Palane, that the fly called "tsetse" abounded on the Tamunakle. As its bite is fatal to oxen, horses, and dogs, though harmless to men and goats, and we had no more oxen than were sufficient to draw our waggons, I proposed proceeding alone; but Mrs. L. preferring to wait during my absence among the Bataoana, we recrossed the Zouga, and went down towards the lake. Sechulathebe, the chief, furnished guides, and informed us that the distance would be performed partly by land and partly by water, as the Tamunakle had a very zigzag course; that the riding ox would certainly die soon after I returned, in consequence of being bitten by the fly, and promised to furnish my family with meat during my absence, but objected to Sechele going along with me, because his messenger had not yet returned to tell how Sebitoane's mind stood affected towards him. Everything seemed favourable, and, before starting, I took my wife down to take a peep at the lake. We felt rather more curiosity

than did an Englishman who came to buy ivory from the Bataoana, for, although within six miles of it, he informed us that he had never visited it. On the day following our driver and leader were laid up by fever, and subsequently to that two of our children, and several of the people besides; a young English artist, Mr. Rider, who had taken some views of the lake scenery, and a Hottentot belonging to another party, died of it. As the malaria seemed to exist in a more concentrated form near the Ngami than in any other part, we were compelled to leave, after spending two Sundays with the Bataoana; and as the time at my command would have been spent before I could safely leave my people, the fever and the fly forced me to return to Kolobeng. I was mistaken last year in supposing the epidemic, of which we heard, to be pneumonia; there is undoubtedly a greater amount of cough on the river than at Kolobeng, but the disease which came under my observation this year was real marsh-fever. The paludal miasma is evolved every year as the water begins to flow and moisten the banks of vegetable matter. When the river and lake are full the fever ceases, but it begins again when evaporation has proceeded so far as to expose the banks to the action of the sun. Our visit was made last year when the river was nearly at its height; but the lake had now retired about 20 feet from the spot on which we stood last year; this might be about 3 feet in perpendicular height. In the natives, the effects of the poison imbibed into the system appear most frequently in the form of a bilious fever, and they generally recover after a copious evacuation of bile. In some it appears as continued fever. In a child there was the remittent form, while in two cases it was simply intermittent. In one case the vascular system of the abdomen was greatly affected, and the patient became jaundiced and died; in another there were only muscular pains and rapid decline of strength; while in several others there was only pain in the head, which a dose of quinine removed. Mr. Wilson, an enterprising trader, who had it in its most severe form, had several violent fits of intermittent fever when recovering from the other, and at a distance of 400 miles from the lake. This disease seems destined to preserve intertropical Africa for the black races of mankind. If the Boers, who have lately fallen upon the plan of waylaying travellers between Kuruman and this, should attempt to settle on either lake or river, they would soon find graves. As the Ngami is undoubtedly a hollow compared to Kolobeng, and the Teoge, a river which falls into the lake at its N.W. extremity, is reported to flow with great rapidity, the region beyond must be elevated. A salubrious spot must be found before we can venture to form a settlement: but that alone will not suffice, for Kolobeng is 270 miles by the trochameter from Kuruman, and the

lake by the same instrument is 600 miles beyond this station. *We must have a passage to the sea on either the eastern or western coast.* I have hitherto been afraid to broach the project, but, as you are aware, the Bechuana mission was virtually shut up in a cul-de-sac on the N. by the Desert, and on the E. by the Boers. The Rev. Mr. Fridoux, of Motito, lately endeavoured to visit the Ramapela, and was forcibly turned back by an armed party. You at home are accustomed to look upon a project as half finished when you have secured the co-operation of the ladies. Well, then, my better half has promised me twelve months' leave of absence for mine. Without promising anything, I mean to follow a useful motto in many circumstances, and "try again."

The following information, gleaned from intelligent natives, may be interesting, and probably is not far from the truth, as they could have no object in deceiving me. The Ngami is merely a reservoir for the surplus waters of a much larger lake or marsh, containing numerous islands, about 150 or 200 miles beyond. Sebitoane, who was defeated by the Griquas near Motito or Latakou, in 1824, lives on one of these islands. The river, which falls into the Ngami at its N.W. extremity, is called the Teoge; it runs with so much rapidity that canoes ascend with great difficulty, and when descending no paddling is required, as the force of the current suffices to bring the boats down. Large trees are frequently brought down, and even springboks and other antelopes have been seen whirling round and round in the middle of the stream, as it hurried on their carcasses to the lake. But this flow only occurs at one period of the year, and whence the increase of water in the upper lake is derived no one can tell. Other rivers are reported as existing beyond Sebitoane's district, and a large population is said to live on their banks. The names of these tribes are: Bagomae, Barovaia, Barosia, Batongka, Banambia, Banami, Bazatoa, Bachorongka, and Babiko. The people of the last-named tribe are famed for their skill in manufactures, are lighter in colour than the Bakhoba, and have longer hair and beards. All the iron used among the people near the lake comes from the N. Though the Bakhoba are much more inquisitive than the Bechuanes, I never met with one who had even heard of the existence of the sea. They had heard of a people whom we conjectured to be Portuguese, and we saw an old coat which we believed to be of Portuguese manufacture. Although we have seen the Zouga flowing and even rising considerably, the natives assert that soon after the small reservoir near the Bakurutse villages, called Kumatao, is filled by the Zouga, the latter ceases to flow, the rains do not affect it in the least, and in many parts its bed becomes quite dry. This is also the case, according to report, with the Tamunakle and Teoge. During a certain

portion of the year the beds of these rivers exhibit only a succession of pools with dry patches between them. The fishes, which we saw so abundant in July and August last year, had not descended from the N. in June. The Bakhoba seemed quite sure they would appear in the month following, and they enumerated nine varieties of them in the lake and rivers, two of which are said to attain occasionally the length of a man. Of the five varieties which came under our observation four were very good eating; the fifth, the *Glanis siluris*, had attained a length of about 3 feet. Crocodiles, or alligators, and hippopotami are also found, but the latter are now scarce in consequence of the Bakhoba frequently hunting them; they kill them by means of a large harpoon, to which a strong rope is attached, in somewhat the same manner as whalers do. They use nets made of the hibiscus, baskets, and assegais for killing fish; their canoes are flat-bottomed, and scooped out of single trees. The banks of the river are in many parts lined with trees of a gigantic growth. I observed twelve quite new to us at Kolobeng. The banyan and palmyra were recognised as Indian trees by our friend Mr. Oswell; the boabob, the body of which gives one the idea of a mass of granite from its enormous size, yields a fruit about the size of a quart-bottle; the pulp between the seeds tastes like cream of tartar, and it is used by the natives to give a flavour to their porridge. Three others bear edible fruits, one of which, called "moporotla," yields a fruit, an unripe specimen of which measures $20\frac{1}{2}$ inches in length and $7\frac{1}{2}$ in circumference; the seeds are roasted and eaten, and the body of the tree is used for making canoes. Another, called "motsouri," is a beautiful tree, and very much resembles the orange, but we did not see the fruit. The natives pound the root of a kind of flag, and obtain flour not greatly inferior to that from wheat in taste and appearance; this flag is called "tsitla," and grows abundantly on both lake and river. The root of a water-lily is likewise used as a vegetable, but it is not so agreeable as the tsitla. The people sow when the river has risen high enough to moisten the soil of the flats in which their gardens are situated; they do not require to wait for rain, as the other tribes must do, for they have good crops, though but little rain falls. Rain-makers are consequently at a discount among the Bakhoba. Besides the usual native produce they cultivate an excellent ground-nut.

The banks of the Zouga are studded with pitfalls, which the Bakhoba dig for the purpose of killing game. Some of these are very neatly smeared over with mud, and if a sharp look-out is not kept, one finds himself at the bottom with the sand running down on him, as the first intimation of the presence of the trap; they are from 8 to 10 feet in depth, and the wild animals are so

much afraid of them that they drink during the night, and immediately depart to the desert. Elephants abound in large numbers, but previous to our first visit the ivory was of no value; the tusks were left in the field with the other bones. I saw 13 which had been thus left, and which were completely spoiled by the weather. In our first visit the Batoana would have preferred to sell a tusk for a few beads to parting with a goat for twice the amount; they soon, however, acquired a knowledge of the value of ivory. In one village the headman informed me that two of his wives had been killed by elephants entering the village during the night and turning over the huts, apparently by way of amusement. Besides elephants, rhinoceros, buffaloes, &c., we observed a new species of antelope, called "leche;" it is rather larger than the pallah, the horns in shape are like those of the waterbuck, the colour of the skin is a beautiful brownish yellow, and its habits are those of the waterbuck. Mr. Oswell has this year secured a new variety of the khooodoo.

The country beyond the Bamangwato, so far as we have penetrated, is quite flat, only intersected here and there by the dry beds of ancient rivers. The desert does not deserve its name, excepting from its want of water, for it is usually covered with abundance of grass, bushes, and trees; nor is it destitute of inhabitants, as both men and animals exist in considerable numbers. Man, however, has a hard struggle to keep soul and body together. The Bakalabari children are usually distinguished by their large protruding abdomen, and ill-formed legs and arms; the listless eye shows that youth has few joys for them. Although much oppressed by the Bechuanas, who visit them annually in order to collect skins, they are often at variance among themselves. They obtain water in certain hollow parts, called "sucking-places," where there is a stratum of wet sand about 3 feet below the surface, by means of a reed. A bunch of grass is tied round one end of it, to act as a sort of filter; this is inserted in the wet sand, and that which was taken out in making the hole is firmly rammed down around it. The mouth applied to the free extremity draws up enough of water to fill a load of ostrich eggshells. By making wells in these spots we several times obtained water sufficient for our oxen. The natives were always anxious that we should not in digging break through a hard layer at the bottom of the wells, asserting that if we did the water would be lost. The Bushmen of the desert are perhaps the most degraded specimens of the human family: those near the river Zouga look much better; the river supplies them with fish and "tsitla," and they seem expert in the use of the bow and arrow, for they have killed nearly all the lions. The Botletli are real Bushmen in appearance and language, and about twelve years ago were in

possession of large herds of cattle. We saw specimens of the horns of these cattle, which measured from 6 to 8 feet from point to point. The Bushmen are very numerous on all sides of both lake and river, and their language has as much klick as it has further S.

Of the animals which live in the desert, the eland is, perhaps, the most interesting. It is the largest of the antelope kind, attains the size of a very large ox, and seems wonderfully well adapted for living in that country; for though they do drink a little if they pass near water, they can live for months without a drop: they become very fat, the meat is excellent, and, as they are easily run down by a good horse, it is surprising to me that they have not been introduced into England. The soil is generally sandy; vegetation is not much more luxuriant, except in the immediate vicinity of the river, than in this portion of Africa generally. All the rocks we saw consisted of calcareous tufa, travertin, and sandstone. On the banks of the lake there is a rock of igneous origin. The tufa contains no shells, but the salt-pans near the lower end of the Zouga are covered with four varieties of recent shells. It is probable these flats, called salt-pans because sometimes covered with an efflorescence of salt, were reservoirs, such as the Kumatoa is now, at a period when the flow of the Zouga was greater than it is at present. The country generally is unquestionably drying up. Streams and fountains which, in the memory of persons now living, supplied villages with water, are now only dry watercourses; and as ancient river-beds are now traversed by more modern streams, giving sections which show banks of shells, gravel, and rolled boulders, it is, perhaps, not unreasonable to conjecture that an alteration in the elevation of the entire country is taking place. At present, wherever the bed of the Zouga may lead (perhaps towards the Limpopo?), water seldom flows far past the Bakaratsé villages.*

* In a letter since received by Dr. Shaw, Mr. Livingston says that he was disappointed in his last visit to Lake Ngami, in not receiving guides from Sebitoane, to whom he had dispatched Bakwains, asking for them to be sent to meet him on the Zouga. The fly "tsetse" prevented his proceeding alone without them. In speaking of the waters to the N. of the Ngami the natives make use of the term "Linokanoka" (River's-river) or many rivers. After his departure, several of Sebitoane's men did arrive, and offered to act as guides to Mr. Oswell, while others were sent on all the way to Kolobeng; and Mr. Livingston intended proceeding in May of the present year, in company with Mr. Oswell, on a visit to Sebitoane. These people say that they knew the *Zimbese* and another river, which runs N.W. to the sea. Some of them had gone down it to the sea on the W. coast, where they saw ships, and called out to them "Hey! Come and tell us the news!" but, they innocently added, "they did not mind us." They likewise called a large river, running eastward, the *Zambusu*. Native slave-dealers had once visited Sebitoane, who gave them many of his captives. An individual of a tribe from the N. of Sebitoane's country accompanied these traders.—Ed.