the attempt to go farther, and crawled under a tree for shelter. After the excessive heat of the day one is peculiarly sensitive to cold at night. The chief's blanket had fortunately not gone on; he covered me with it, and rested himself on the cold, wet ground until the morning. If such men must perish before the white race by an immutable law of heaven, we must seem to be under the same sort of 'terrible necessity' in our 'Kaffre wars' as the American professor of chemistry said he was when he dismembered the man whom he murdered."

On the island of Kalai, they found the grave of Sekote, a Batoka chief, who had been conquered by Sebituane, and had retreated to this place, where he died. The ground near the grave was garnished by human skulls, mounted on poles, and a large heap of the crania of hippopotami—the tusks being placed on one side. The grave was ornamented with seventy large elephants' tusks, planted round it with the points inwards, forming an ivory canopy; and thirty more were placed over the graves of his relatives. As they neared the point from which the party intended to strike off to the north-east from the river, Livingstone determined to visit the falls of Mosioatunya, known as the falls of Victoria since his visit. He had often heard of these falls from the Makololo. None of them had visited them, but many of them had been near enough to hear the roar of the waters and see the cloud of spray which hangs over them. The literal meaning of the Makololo name for them is, "smoke does sound there," or "sounding smoke."

He visited them twice on this occasion, the last time along with Sekeletu, whose curiosity had been aroused by his description of their magnificence. Just where the sounding smoke of which Sebituane and the Makololo had told him, rises up for several hundred feet into the sky, and is visible for over twenty miles—a spectacle of ever changing form and colour—the mighty stream, nearly a mile in width, plunges in a clear and unbroken mass into a rent in the basaltic rock which forms the bed of the river and the low hills which bound the river in front and on either side for a considerable distance of its course. This chasm is from eighty to a hundred feet in width, and of unknown depth, the thundering roar of the falling waters being heard for a distance of many miles. The throbbing of the solid ground, caused by the immense weight and force of the falling water is felt at a great distance from the tremendous chasm in which the great river is engulfed.

After a descent of several yards, the hitherto unbroken mass of water presents the appearance of drifted snow, from which jets of every form leap out upon the opposite side of the chasm. For about a hundred feet, its descent can be traced to where it reaches the seething surface of the water below; from which it arises, in jets of water like steam. A dense smoke cloud of spray which, descending on all sides like rain, wets the on-looker to the skin, maintains a constant green verdure within the reach of its influence.

The depth of the narrow chasm, which draws off such a vast volume of water must be very great. At one place it has been plumbed to a depth more than twice that of the pool into which the St. Lawrence falls at Niagara. The great smoke clouds are formed by five distinct columns of spray which ascend from the gulf to a height of from two to three hundred feet. Three of these columns—two on the right, and one on the left of Garden Island, which overlook the falls, appeared to Livingstone to contain as much water in each, as there is in the Clyde at the fall of Stonebyres during a flood. The waters are drained off near the eastern end of the falls by a prolongation of the rocky chasm, which pursues its way, with little variation as to breadth, in a zigzag course through the mass of low hills for over thirty miles, when the tormented waters break into the plain and spread out to their former width, to be here and there narrowed by the several rapids which interrupt its navigation, in some cases even to the light canoes of the bold and skilful Makalaka and Batoka men.

The scene round the falls is exceedingly beautiful. The banks and islands are covered with vegetation, through which the giants of the African forest rear their lofty crests. The baobab, each of whose arms would form great trees, the palmyra, with its feathery leaves, the mohonou, in form like the cedars of Lebanon, the cypress-like motsouri, and other varieties of trees similar to our own oaks, elms, and chestnuts, stand out clear against the background of smoke cloud, which during the day glows in the sun, and is surmounted by magnificent rainbows, and at night shines with a yellow sulphurous haze, shadowed by clouds of pitchy blackness, as if belched from the crater of a burning mountain. No wonder the ignorant natives look upon this scene, so grand and so terrible in its beauty and majesty, as the abode of their God Barimo; it is the highest manifestation of the power and grandeur of nature with which they are acquainted. The untutored savage worships power and mystery; and here these are presented to him in a form which cannot fail to impress his imagination.

Previous to the formation of the immense fissure into which the Zambesi falls, the plains above must have been the bed of a vast lake, and its whole course from the falls upwards, previous to Livingstone's visit, had been popularly supposed to be a parched desert. The great traveller notices that while he was engaged in resolving this a writer in the *Athenæum*, dealing with the previous discoveries and guesses as to the extent of this river, placed its source in the neighbourhood of the falls, on the edge of a great desert, and made its upper waters, the Leeba and the Leeambye, turn sharply to the south, and lose themselves in the arid wastes of the Kalahari desert; so difficult is it to get mere theorists to give up a long-existing notion. To this writer a central desert must exist, and all other physical facts, however new and strange, must conform to it.

We cannot resist giving Dr. Livingstone's account of the Victoria Falls, as furnished to Sir Roderick Murchison:—

"Our convoy down to Mosioatunya consisted of the chief and about 200 followers. About 10 miles below the confluence of the Chobe and Leeambye or Zambesi, we came to the commencement of the rapids. Leaving the canoes there, we marched on foot about 20 miles further, along the left or northern bank, to Kalai, otherwise called the island of Sekote. It was decided by those who knew the country well in front, that we should here leave the river, and avoid the hills through which it flows, both on account of tsetse and the extreme ruggedness of the path. By taking a north-east course the river would be met where it has become placid again. Before leaving this part of the river I took a canoe at Kalai, and sailed down to look at the falls of Mosioatunya, which proved to be the finest sight I have seen in Africa. The distance to the 'Smoke-sounding' Falls of the Zambesi was about 8 miles in a S.S.E. direction, but when we came within 5 miles of the spot we saw five large columns of 'smoke' ascending 200 or 300 feet, and exhibiting exactly the appearance which occurs on extensive grass-burnings in Africa. The river above the falls is very broad, but I am such a miserable judge of distances on water that I fear to estimate its breadth. I once showed a naval officer a space in the bay of Loanda which seemed of equal breadth with parts of the river which I have always called 400 yards. He replied, 'That is 900 yards.' Here I think I am safe in saying it is at least 1000 yards wide. You cannot imagine the glorious loveliness of the scene from anything in England. The 'Falls,' if we may so term a river leaping into a sort of straight-jacket, are bounded on three sides by forest-covered ridges about 400 feet in height. Numerous islands are dotted over the river above the falls, and both banks and islands are adorned with sylvan vegetation of great variety of colour and form.

"At the period of our visit many of the trees were spangled over with blossoms, and towering above them all stands the great burly baobab, each of whose (syemite-coloured) arms would form the bole of a large ordinary tree. Groups of graceful palms, with their feathery-formed foliage, contribute to the beauty of the islands. As a hieroglyphic, they always mean 'far from home;' for one can never get over their foreign aspect in picture or landscape. Trees of the oak shape and other familiar forms stand side by side with the silvery Mohonono, which in the tropics looks like the cedar of Lebanon. The dark cypress-shaped Motsouri, laden with its pleasant scarlet fruit, and many others, also attain individuality among the great rounded masses of tropical forest. We look and look again, and hope that scenes lovely enough to arrest the gaze of angels may never vanish from the memory. A light canoe, and men well acquainted with the still water caused by the islands, brought us to an islet situated in the middle of the river and forming the edge of the lip over which the water rolls. Creeping to the verge, we

peer down into a large rent which has been made from bank to bank of the broad Zambesi, and there we see the stream of a thousand yards in breadth suddenly compressed into a channel of fifteen or twenty. Imagine the Thames flanked with low tree-covered hills from the tunnel to Gravesend, its bed of hard basaltic rock instead of London mud, and a rent or fissure made in the bed, from one end of the tunnel to the other, down through the keystones of the arch, to a depth of 100 feet, the lips of the fissure being from 60 to 80 feet apart. Suppose farther, the narrow rent prolonged from the tunnel to Gravesend along the left bank, and the Thames leaping bodily into this gulf, compressed into 15 or 20 yards at the bottom, forced to change its direction from the right to the left bank, then turning a corner and boiling and roaring through the hills, and you may conceive something similar to this part of the Zambesi.

"In former days the three principal falls were used as places where certain chiefs worshipped the Barimo (gods or departed spirits). As even at low water there are from 400 to 600 yards of water pouring over, the constancy and loudness of the sound may have produced feelings of awe, as if the never-ceasing flood came forth from the footstool of the Eternal. It was mysterious to them, for one of their canoe songs says,

> 'The Leeambye—nobody knows
> Whence it comes or whither it goes.'

"Perhaps the bow in the cloud reminded them of Him who alone is unchangeable and above all changing things. But, not aware of His true character, they had no admiration of the beautiful and good in their bosoms. Secure in their own island fortresses, they often inveigled wandering or fugitive tribes on to others which are uninhabited, and left them there to perish. The river is so broad, that, when being ferried across, you often cannot see whether you are going to the main land or not. To remove temptation out of the way of our friends, we drew the borrowed canoes last night into our midst on the island where we slept, and some of the men made their beds in them.

"Before concluding this account of the falls, it may be added that the rent is reported to be much deeper further down, perhaps 200 or 300 feet; and at one part the slope downward allows of persons descending in a sitting posture. Some Makololo, once chasing fugitives, saw them unable to restrain their flight, and dashed to pieces at the bottom. They say the river appeared as a white cord at the bottom of an abyss, which made them giddy and fain to leave. Yet I could not detect any evidence of wear at the spot which was examined, though it was low water, and from seven to ten feet of yellow discolouration on the rock showed the probable amount of rise. I have been led to the supposition by the phenomena noticed by both Captain Tuckey and

Commander Bedingfield in the Congo or Zaire, that it, as well as the Orange River, seems to be discharged by a fissure through the western ridge. The breadth of the channel among the hills, where Captain Tuckey turned, will scarcely account for the enormous body of water which appears farther down. Indeed, no sounding can be taken with ordinary lines near the mouth, though the water runs strong and is perfectly fresh.

"On the day following my first visit I returned to take another glance and make a little nursery garden on the island; for I observed that it was covered with trees, many of which I have seen nowhere else; and as the wind often wafted a little condensed vapour over the whole, it struck me this was the very thing I could never get my Makololo friends to do. My trees have always perished by being forgotten during droughts; so I planted here a lot of peach and apricot stones and coffee-seed. As this island is unapproachable when the river rises, except by hippopotami, if my hedge is made according to contract, I have great hopes of Mosioatunya's ability as a nuseryman. On another island close by, your address of 1852 remained a whole year. If you had been a lawyer, instead of a geologist, your claims to the discovery would have been strong, as 'a bit of your mind' was within sight and sound of the falls very long before the arrival of any European.* I thank you for sending it."

Mr. Chapman, who visited the falls several times, gives the following as his impression on the second visit. His introduction to the falls at a distance occurred under the following circumstances:—

"When we halted for the night, under a gigantic tree by the path-side, we had no idea that we were so near the falls, but as the boisterous laughter and merry frolicking of our little Makalaka subsided, there gradually arose in the air a murmuring, and at length a roaring sound, increasing as the night advanced, and sounding like the dashing of a mighty surf upon a rock-bound coast. So much does the sound resemble this, that a stranger, unacquainted with the existence of a waterfall here, and unaware of his distance from the sea, could not be persuaded to the contrary. It was one everlasting roar, broken occasionally by the thundering, like successive cannonading in the distance; and thus it sounded all through the night.

"I should remark that on sailing down the river, one ignorant of the fact may approach to within a very few yards of the falls, without dreaming of being on the verge of such a chasm, owing to the strange and mysterious manner in which the whole stream, of nearly a mile in breadth, has suddenly disappeared before the eyes, vanishing as if it had been swallowed by the earth. In all falls that I have seen, a perspective view of the water

* Sir Roderick's address was contained in the packages sent by Dr. Moffat from Moselekatse's country, all of which Livingstone found carefully preserved on an island in the Zambesi on his return from the west coast.

below has always been visible, but there is nothing of the kind here. You see land before you on your own level, which seems as if springing out of the stream on which you are sailing, and proceed in utter unconsciousness of the danger ahead, discovering at length that it is on the opposite side of the rent. But for this circumstance, the Victoria Falls, presenting one unobstructed view, would not alone have been the most magnificent, but the most stupendous sight of the kind on the face of the globe."

In another place he says:—

"As I neared the falls from the north, the sound issuing from the crack is more subdued; the smoke during the heat of the day less; but although we can sometimes hardly hear the roaring of the water, though within half a mile of it, we can feel very distinctly a quivering sensation in the earth, like the distant rumbling of an earthquake. But the sound of the waters is very different under the various circumstances in which it is heard, whether from a height or from a valley; wake up at any time during the night, and you may hear it like the roaring of a mighty wind, or the commotion of a strong sea. I have since heard it at the distance of fifteen miles on an elevated region in the south.

"There are a thousand beauties to be seen here which it is impossible to describe. My senses became truly overwhelmed with crowding sensations while gazing on these wondrous works of God, but I cannot describe them. In passing, we again peep down into the depths of the yawning chasm at the west end, belching forth its dense clouds of vapour, and follow with our eyes through the blinding brilliancy of the rainbow the boiling, roaring, dashing, splashing, gushing, gleaming, bounding stream, and exclaim, 'How beautiful!' 'How terrible!' These rainbows, seen from a distance of about two miles at 4 p.m., their depth being then very much enlarged on the rising spray, impart a most startling effect. On observing it for the first time from this point, it looked so much like sulphurous fire issuing from the bowels of the earth, that I was on the point of exclaiming to my companion, "Look at that fire.' The many streams of vapour flying fast upwards through the broad and vivid iris of the rainbows looked so like flames, that even I was for the moment mistaken. We passed the Three Rill Cliff, and came again to the first extensive fall of water. Here the stream, pouring over the edge of the precipice, tumbles like gigantic folds of drapery. I have never seen anything with which I can compare it. Here green, there convolute streams pour down in heavier volumes, bearing behind in their flight a thousand comet-like sparkles of spray. . . Here and there a deeper channel has been worn, down which a larger body of water falls into the basin below, again to rebound, boiling, to the surface, over which rose swift volumes of smoke from the falling mass, puffed out like great discharges of musketry, and enveloping the scene in an aerial misty shroud, through which the oblique rays of the sun

are seen in ever-shifting perspective. But while watching intently to catch every charm of these falls, it vanishes on the instant. The view is always changing, yet ever recurring. Creep again to the uppermost pinnacle over the outlet—a giddy height—and peer into the crack to the right and left; here large, heavy, fleecy masses chase one another down like phantoms chasing phantoms, and then dissolve into thin air before they are overtaken. Wherever the large broad masses fall, the height does not seem so stupendous as where the streams are smaller."

At some points the spectator can look down into the chasm for a distance of three hundred feet, but when a large body of water raises clouds of spray the eye can penetrate only to about a third of that area. From the surface of the water to the bottom of the rent, the distance must be very great, considering the enormous quantity of water which flows into it. Before the disruption of the earth which formed the crack, the whole of the Makololo country and the valley of the river, as Dr. Livingstone pointed out, must have been under water; and, from his observations and those of others, it is evident that the falls are of recent formation, and may not date many generations back.

Taking leave of Sekeletu and his followers, the party pushed northwards through the Batoka country. This powerful and numerous tribe had been conquered and decimated by Sebituane and the Matabele, until vast tracts of fruitful hill and plain, in which the larger game abounded, were almost devoid of human life. The Batoka people are of a low type, and are of a cruel and vindictive disposition, evil qualities, probably fostered by the wars they have been forced to wage against more powerful tribes. They have a barbarous habit of knocking out the front teeth in the upper jaw, which gives to their faces a hideous expression. They explained that they did this in order to look like oxen, and not like zebras, as they hold the latter animals in detestation.

Speaking of the country he was now passing through in his letter to Sir Roderick Murchison, Livingstone says :—

"The sources of the rivulets, which have all a mountain-torrent character, as well as the temperature of the boiling water, showed that we were ascending the eastern ridge. The first stream is named Lekone, and is perennial. It runs in what may have been the ancient bed of the Zambesi, before the fissure was made. I could examine it only by the light of the moon, but then it seemed very like an ancient river channel. The Lekone runs contrary to the direction in which the Zambesi did and does now flow, and joins the latter five or six miles above Balai. If little or no alteration of level occurred when the fissure was formed, then, the altitude of the former channel being only a little higher than Linyanti, we have a confirmation of what is otherwise clearly evident, that the Zambesi was collected into a vast lake, which included

not only Lake Ngami in its bosom, but spread westwards beyond Libele, southwards and eastwards beyond Nehokotsa. Indeed, in many parts south of Ngami, when an anteater makes a burrow, he digs up shells identical with those of mollusca now living in the Zambesi. And all the surface indicated is covered by a deposit of soft calcareous tufa, with which the fresh waters of the valley seem to have formerly been loaded. The water in the Barotse valley was probably discharged by the same means; for Gonye possesses a fissure character, and so does another large cataract situated beyond Masiko in the Kabompo country.

"It would be interesting to ascertain if these rents were suddenly made and remain in their original state, or whether they are at present progressive. I had a strong desire to measure a point of that of Mosioatunya, but had neither the means of accurate measurement, nor of marking the hard rock afterwards. They have proved drains on a gigantic scale; and if geologists did not require such eternities of time for their operations, we might hazard a hint about a salubrious millenium for Africa.

"Shall we say that they are geologically recent, because there is not more than 3 feet worn off the edge subjected to the wear of the water? and that they are progressive, as the gradual desiccation of the Bechuana country shows a slow elevation of the ridges? No one will probably think much of the negative fact, that there is no trace of a tradition in the country of an earthquake. The word is not in the language; and though events, centuries old, are sometimes commemorated by means of names, I never met any approach to a Tom Earthquake or Sam Shake-the-ground among them. Yet they do possess a tradition which is wonderfully like the building of the Tower of Babel, ending differently, however, from that in the Bible, the bold builders having got their heads cracked by the giving way of the scaffolding. There is also the story of Solomon and the harlots; and all trace back their origin to a time when their forefathers came out of a cave in the north-east in company with animals. The cave is termed Loe (Noe?), and is exceptional in the language, from having masculine pronouns."

In the valley of the Lekone, a considerable river which falls into the Zambesi below the falls, they rested a day at the village of Moyara, whose father had been a powerful chief, with many followers and large herds of cattle and goats. His son lives among the ruins of his town, with five wives and a handful of people, while the remains of his warlike and more powerful father are buried in the middle of his hut, covered with a heap of rotting ivory. Bleached skulls of Matebele, evidences of his power and cruelty, were stuck on poles about the village. The degraded condition of the Batoka among the more powerful tribes was exemplified by the fact that a number of them were introduced into his party by Sekeletu to carry his tusks to the nearest Portuguese settlement.

The open plains and the short grass and firm ground made travelling a luxury compared with their experiences in going to the west coast, and the party marched on in the highest spirits. Fruit trees, yielding edible fruit, were abundant; several of them were similar to those they had seen on the coast near Loanda. Large regiments of black soldier ants were seen; they are about half an inch in length, and march in close column headed by leaders, which are considerably larger than the others. They prey upon the white ants, which are stung by the leaders, the sting producing a state of coma, during which they are carried away to be eaten by the marauders. When disturbed in their march, they utter a distinct hissing or chirping sound. But for the black ants, the white ants would increase to an alarming extent, and make the country a desert by eating up everything vegetable. The white ants perform several useful functions. The soil, after being manipulated by them in forming their houses and nests, becomes exceedingly fertile, and they remove all decaying vegetation, just as the black ants do all putrid flesh and excrement.

The Batoka, like the Makololo and other inland tribes, smoke the *mutokwane*, a species of hemp, which produces a kind of intoxication, which sometimes leads to a fit of mad frenzy. So strongly are they addicted to this practice, that even Sekeletu and his head men could not be persuaded by Livingstone to abandon it.

Buffaloes, antelopes, elephants, zebras, and lions and other felines abounded in the district crossed by them during the early part of their journey. In consequence of being little disturbed, the larger game were very tame. Livingstone shot a bull baffalo among a herd. When wounded, the others endeavoured to gore it to death. This herd was led by a female; and he remarks that this is often the case with the larger game, as the leader is not followed on account of its strength, but its wariness, and its faculty of discerning danger. The cow buffalo-leader, when she passed the party at the head of the herd, had a number of buffalo birds seated upon her withers. By following the honey-birds, his attendants procured abundance of honey, which formed an agreeable addition to their meals.

The ruins of many towns were passed, proving the density of the population before the invasion of the country by Sebituane, and his being driven out of it by the Matabele and other rival tribes. At the river Dila they saw the spot where Sebituane had lived. The Makololo had never ceased to regret their enforced departure from this healthy, beautiful, and fertile region; and Sekwebu had been instructed by Sekeletu to point out to Livingstone its advantages as a position for their future head quarters. Beyond the Dila they reached a tribe hostile to the Makololo, but, although they assumed a threatening attitude, the party, owing to Livingstone's courage and firmness, passed through unharmed. Save on this occasion, the Batoka were most

friendly, great numbers of them coming from a distance with presents of maize and fruit, and expressing their great joy at the first appearance of a white man amongst them. The women clothe themselves much as the Makololo women do, but the men go about *in puris naturalibis*, and appeared to be quite insensible to shame. The country got more populous the farther east they advanced, but the curiosity and kindness of the people fell off as they proceeded. Food was abundant; the *masuka* tree was plentiful, and its fruit was so thickly strewn about the ground that his men gathered and ate it as they marched. Everywhere among these unsophisticated sons of nature, who had all they wished for in their genial climate—plentiful herds, and abundant crops of maize and fruit—the cry was for peace. Before the advent of Sebituane the country had been swept by a powerful chief named Pingola, who made war from a mere love of conquest; and the memory of their sufferings had entered deeply into their hearts. A sister of Monze, the head chief of the tribes in the district they were now traversing, in expressing her joy at the prospect of being at peace, said "It would be so pleasant to sleep without dreaming of any one pursuing them with a spear."

Monze visited the party wrapped in a large cloth, and rolled in the dust, slapping the outside of his thighs with his hands—a species of salutation Livingstone had a strong repugnance to, especially when performed by naked men; but no expression of his feelings tended to put a stop to it. Monze gave them a goat and a fowl, and a piece of the flesh of a buffalo which had been killed by him, and was greatly pleased with a present of some handkerchiefs; the head men of the neighbouring villages also visited them, each of them provided with presents of maize, ground nuts, and corn. Some of these villagers had the hair of their heads all gathered in a mass, and woven into a cone, from four to eight inches in width at the base, ending in a point more or less prolonged.

Livingstone's own sketch of the country, and the mode of travel, etc., in one of his letters, merits a place here:—

"Still ascending the western side of the ridge (to the north of the Zambesi), we cross another rivulet named Unguesi, which flows in the same direction as Lekone, and joins the Zambesi above the point where the rapids begin. The next tributary, called Kalomo, never dries; and being on the top of the ridge, runs south, or south and by east, falling into the Zambesi below the falls. Lastly, we crossed the Mozuma, or Dela, flowing eastwards. We continued the eastern descent till we came to the Bashukulompo River, where it may be said to terminate, for we had again reached the altitude of Linyanti. We intended to have struck the Zambesi exactly at the confluence, but we were drawn aside by a wish to visit Semalembue, who is an influential chief in that quarter. The Bashukulompo River is here called Kehowhe, and further down it is named

Kafue. Passing through some ranges of hills, among which the Kafue winds, we came to the Zambesi, a little beyond the confluence. It is here much broader than that part of it called Leeambye, but possesses the same character of reedy islands, sandbanks, and wonderful abundance of animal life. It was much discoloured by recent rains; but as we came down along the left bank, it fell more than two feet before we had gone thirty miles. It is never discoloured above Mosioatunya. Hence I conclude the increase or flood was comparatively local, and effected by numerous small feeders on both banks east of the ridge. When we ascended the Zambesi, towards Kabompo, in January, 1854, the annual flood which causes inundation had begun, and with the exception of sand, which was immediately deposited at the bottom of the vessel, there was no discolouration. Ranges of hills stand on both banks as far as we have yet seen it. The usual mode of travelling is by canoe, so there are generally no paths, and nothing can exceed the tedium of winding along through tangled jungle without something of the sort. We cannot make more than two miles an hour; our oxen are all dead of tsetse, except two, and the only riding ox is so weak from the same cause as to be useless. Yet we are more healthy than in the journey to Loanda. The banks feel hot and steamy both night and day, but I have had no attack of fever through the whole journey. I attribute this partly to not having been 'too old to learn,' and partly to having had wheaten bread all the way from the waggon at Linyanti. In going north we braved the rains, unless they were continuous; and the lower half of the body was wetted two or three times every day by crossing streams. But now, when rain approaches, we halt, light large fires, and each gets up a little grass shed over him. Tropical rains run through everything, but, though wetted, comparatively little caloric is lost now to what would be the case if a stream of water ran for an hour along the body. After being warmed by the fire, all go on comfortably again, and the party has been remarkably healthy. In the other journey, too, wishing to avoid overloading the men, and thereby making them lose heart, I depended chiefly on native food, which is almost pure starch, and the complete change of diet must have made me more susceptible of fever. But now, by an extemporaneous oven, formed by inverting a pot over hot coals, and making a fire above it, with fresh bread and coffee in Arab fashion, I get on most comfortably. There is no tiring of it. I mention this because it may prove a useful hint to travellers who may think they will gain by braving hunger and wet.

"From the longitudes, I estimate the distance from top to top of the ridges to be about 600 geographical miles. I purposely refrain from mentioning any of my own calculations of lunar observations, because it would appear so presumptuous to allow them to appear on the same page with those of Mr. Maclear, who, moreover, undertakes the labour with such hearty good-will, that I fear the appearance even of undervaluing his disinterested aid.

"The eastern ridge seems to bend in to the west at the part we have crossed, and then trends away to the north-east, thereby approaching the east coast. It is fringed on some parts by ranges of hills, but my observations seem to show they are not of greater altitude than the flats of Linyanti. I cannot hear of a hill *on* either ridge, hence the agricultural phrase I employ. And if the space between the ridges is generally not broader than 600 miles, instead of calling the continent basin-shaped, it may be proper to say that it has a furrow in the middle, with an elevated ridge on each side, each about 150 or 200 miles broad, the land sloping on both sides thence to the sea.

"I have referred to the clay-shale, or 'keel' formation, of which I got a glance in the western ridge. In the eastern we have a number of igneous rocks, with gneiss and mica-slate, all dipping westwards; then large rounded masses of granite, which appear to change the dip to the eastward. I bring specimens of both classes of rocks along with me. Is this granite the cause of elevation?

"I shall refer to but one topic more. The ridges are both known to be comparatively salubrious, closely resembling in this respect that most healthy of healthy climates, the interior of Southern Africa, adjacent to the desert. The grass is short; one can walk on it without that high, fatiguing lift of the foot necessary among the long tangled herbage of the valley. We saw neither fountain nor marsh on it; and, singularly enough, we noticed many of the plants and trees which we had observed on the slopes of the western ridge.

"If my opinion were of any weight, I would fain recommend all visitors to the interior of Africa, whether for the advancement of scientific knowledge, or for the purposes of trade or benevolence, to endeavour to ascertain whether the elevated salubrious ridges mentioned are not prolonged farther north than my inquiries extend, and whether sanatoria (health stations) may not be established on them. At present I have the prospect of water-carriage up to the bottom of the eastern ridge. If a quick passage can be effected thither during a healthy part of the season, there is, I presume, a prospect of residence in localities superior to those on the coast. Did the Niger expedition turn back when near such a desirable position for its stricken and prostrate members?

"I have said that the hills which fringe the ridge on the east are not of great altitude. They are all lower than the crest of the ridges, and bear evident marks of having been subjected to denudation on a grand scale. Many of the ranges show on their sides, in a magnified way, the exact counterparts of mud-banks left by the tides. A coarse sandstone rock which contains banks of shingle and pebbles, but no fossils, often exhibits circular holes, identical with those made by round stones in rapids and water-falls. They are from 3 to 4 feet broad at the brim; wider internally, and 6 or 8 feet deep. Some are convenient wells, others are filled with earth; but there is no agency now in operation in the heights in which they appear which could

have formed them. Close to the confluence of the Kafue there is a forest of silicified trees, many of which are five feet in diameter; and all along the Zambesi to this place, where the rock appears, fragments of silicified wood abound. I got a piece of palm, the pores filled with silica, and the woody parts with oxide of iron. I imagined it was one of the old bottom rocks. because I never could see a fossil in it in the valley; but at and about Tete I found it overlying beds of coal!"

As buffaloes and elephants were plentiful, one was now and again shot, so that the party seldom wanted flesh meat. A party of his men on one occasion slaughtered a female elephant and her calf with their spears, native fashion. The mother had much the appearance of a huge porcupine, from the number of spears sticking into her flesh when she fell exhausted by the loss of blood. This was a needlessly cruel method of recruiting their stores of food, and Livingstone did not encourage it; although he found shooting the larger game for food both trying and hazardous, as he could make little use of the arm which had been fractured by the lion when among the Bakwains. His skill was very much impaired, and was provokingly enough at its lowest ebb when meat was most wanted.

"I never before saw," he says in one of his letters, "elephants so numerous or so tame as at the confluence of the Kafue and Zambesi. Buffaloes, zebras, pigs, and hippopotami, were equally so, and it seemed as if we had got back to the time when megatheriæ roamed about undisturbed by man. We had to shout to them to get out of the way, and then their second thoughts were—'It's a trick.' 'We're surrounded'—and back they came, tearing through our long-extended line. Lions and hyænas are so numerous that all the huts in the gardens are built on trees, and the people never go half a mile into the woods alone."

They had now got into a district where rains were frequent, and so much had they been spoiled by the beautiful dry weather and fine open country they had passed through, that at first, as he has told us above, they invariably stopped and took shelter when it fell.

It was on the 18th December they reached the Kafue, the largest tributary of the Zambesi they had yet seen. It was about two hundred yards broad, and full of hippopotami. Here they reached the village of Semalembue, who made them a present of thirty baskets of meal and maize, and a large quantity of ground nuts. On Dr. Livingstone explaining that he had little to give in return for the chief's handsome gift, he accepted his apologies politely, saying that he knew there were no goods in the country from which he had come. He professed great joy at the words of peace which Livingstone addressed to him, and said, "Now I shall cultivate largely, in the hope of eating and sleeping in peace." The preaching of the gospel amongst these people gave them the idea of living at peace with one another as one of its effects. It was not

necessary to explain to them the existence of a Deity. Sekwebu pointed out a district, two and a half days' distance, where there is a hot fountain which emits steam, where Sebituane had at one time dwelt. "There," said he, "had Sebituane been alive, he would have brought you to live with him. You would be on the bank of the river, and by taking canoes, you would at once sail down to the Zambesi, and visit the white people at the sea."

The country they were now in was diversified by low hills, and every available piece of ground in the valleys in the neighbourhood of the villages was carefully tilled. The gardens near the river are surrounded by pitfalls, to prevent the inroads of the hippopotami, which are very numerous and quite tame, showing no fear when any of the party approached them. As they required meat, they shot a cow hippopotamus, and found the flesh tasted very much like pork. The range of hills amongst which they now were, rose from six to nine hundred feet above the level of the river, and these were but the outer and lower fringe of a higher range beyond. From the top of the outer range of hills, they had a splendid view of the surrounding country. The course of the Kafue, through hills and forests, could be followed towards its confluence with the Zambesi, and beyond that lay a long range of dark hills, and above the course of the Zambesi floated a line of fleecy clouds. Elephants, zebras, and buffaloes were met with in vast herds, which showed no dread at their approach. They also saw large numbers of red-coloured wild pigs.

As they approached the Zambesi, the ground became more and more thickly covered with broad-leaved brush-wood, and water-fowl rose out of the pools and streams and flew overhead in large numbers. On again reaching the river, they found it greatly increased in volume, and flowing at the rate of four and a half miles an hour. When Sekwebu was a boy, this region was thickly inhabited, and all the natives had plenty of cattle. The return to it of the larger game, after the depopulation of the country, had introduced the dreaded insect, "tsetse," which rapidly destroyed the cattle.

Every village they passed furnished two guides, who conducted them by the easiest paths to the next. Along the course of the Zambesi, in this district, the people are great agriculturists—men, women, and children were all very busily at work in their gardens. The men are strong and robust, with hands hardened by toil. The women disfigure themselves by piercing the upper lip, and inserting a shell. This fashion universally prevails among the Maran, which is the name of the people. The head men of the villages presented the party freely with food, and one of them gave Livingstone a basinful of rice, the first he had seen for a long time. He said he knew it was white man's meal, and refused to sell a quantity unless for a man. Strange that his first introduction to one of the products of civilisation in this, to him, new region, should be simultaneous with the appearance of a hateful

commerce, fostered by a race holding themselves so much superior to the savage tribes of the interior through which they had passed, who held it in abhorrence.

Previous to Livingstone's arrival in this part of the country, Sinatomba, an Italian slave-dealer, who had married the daughter of a neighbouring chief, had ascended the river in canoes with fifty armed slaves, and carried off a large number of people and a quantity of ivory from several inhabited islands. At the instigation of his father-in-law, several chiefs assembled their followers and attacked him as he descended the river, defeating and slaying him and liberating his prisoners. Selole, a great chief, hearing of the approach of a white man with a large following, imagining that this was another Italian slave-trader, or Sinatomba himself risen from the dead, made great preparations for attacking the party. A timely explanation of the object of their journey put matters to rights at once. At Mburumba's village his brother came to meet them, and in explanation of the delay caused by the threatened attack, told them that the Italian had come among them, talking of peace as they did, and had kidnapped slaves and bought ivory with them, and that they were supposed to be of the same calling. As they had been unsuccessful in hunting the day before, an elephant having got clear off with from seventy to eighty spears fixed in his flesh in addition to the last dozen of Livingstone's bullets, he said, "The man at whose village you remained was in fault in allowing you to want meat; for had he only run across to Mburumba, he would have given him a little meal, and, having sprinkled that on the ground as an offering to the gods, you would have found your elephant." Among these tribes, the chiefs are all supposed to possess supernatural power.

Mburumba did not visit the party himself, and, although he sent presents of meal, maize, and native corn, the conduct of his people was very suspicious, as they never came near them unless in large numbers, and fully armed with bows and spears. The party were suspicious of the intentions of the guides sent by Mburumba to take them to his mother's village; but they reached their destination in safety, and were hospitably treated by Ma-Mburumba, who furnished them with guides, who conveyed them to the junction of the Loangwa and the Zambesi. As the natives assembled in great force at the place where they were to cross the Loangwa, they were still in dread of being attacked; but whatever were their reasons for this formidable demonstration, they allowed the party to pass safely to the other side.

Beyond the river they came upon the ruins of stone houses, which were simply constructed, but beautifully situated on the hill-sides commanding a view of the river. These had been the residences of Portuguese traders in ivory and slaves when Zumbo, which they were now approaching, had been a place of considerable importance as a Portuguese trade settlement. Passing

Zumbo, they slept opposite the island of Shotanaga in the Zambesi, and were surprised by a visit from a native with a hat and jacket on, from the island. He was quite black, and had come from the Portuguese settlement of Tete, which they now learned to their chagrin was on the other side of the stream. This was all the more awkward, as he informed them that the people of the settlement had been fighting with the natives for two years. Mpende, a powerful chief, who lived farther down the river, had determined that no white man should pass him. All this made them anxious to cross to the other bank of the river; but none of the chiefs whose villages lay between their present position and Mpende's town, although in every other way most friendly, dared to ferry them across, in dread of offending that powerful chief.

All but unarmed as they were, and dependent upon the kindness of the people through whose country they were passing, their progress being retarded by the feebleness of their tsetse-bitten oxen, there was no help for it but to proceed and trust to Providence for the reception they might receive from the dreaded chief who was at war with the Portuguese in their front. Trusting in the purity of his motives, and that dauntless courage, tempered with discretion, which had never deserted him, Livingstone passed on, the fear of what awaited him in front not preventing him from admiring the beauty of the country and its capability under better circumstances of maintaining a vast population in peace and plenty. Nearing Mpende's village, where a conical hill, higher than any he had yet seen, and the wooded heights and green fertile valleys commanded his admiration, he all but forgot the danger of his situation, until forcibly reminded of it by the arrival of a formidable number of Mpende's people at his encampment, uttering strange cries, waving some red substance towards them, and lighting a fire on which they placed chains—a token of war—after which they departed to some distance, where armed men had been collecting ever since daybreak.

Fearing a skirmish, Livingstone slaughtered an ox, according to the custom of Sebituane, with the view of raising the courage of his men by a plentiful meal. Although only half-armed, in rags, and suffering from their march, yet inured as they were to fatigue, and feeling a confidence in their superiority over the Zambesi men, notwithstanding all drawbacks in comfort and circumstances, Livingstone had little fear of the result if fight he must; but in accordance with his constant policy, he was bound to accomplish his object in peace, if that were possible. His men were elated at the prospect of a fight, and looked forward to victory as certain, and the possession of corn and clothes in plenty, and of captives to carry their tusks and baggage for them. As they waited and ate the meat by their camp-fire, they said, "You have seen us with elephants, but you don't know yet what we can do with men."

By the time breakfast was dispatched, Mpende's whole tribe was asembled

at about half a mile distance from their encampment; spies, who refused to answer any questions, advanced from among the trees which hid the position of the main body came up to the encampment of the party. To two of these Livingstone handed the leg of an ox, desiring them to carry it to Mpende. This brought a visit from two old men, who asked Livingstone who he was. "I am a Lekoa" (Englishman), he replied. "We don't know the tribe," they said; "we suppose you are Mozunga (Portuguese), with whom we have been fighting." As the Portuguese they knew were half-castes, Livingstone bared his bosom and asked if they had hair and skin like his. "No," they replied, "we never saw skin so white as that. Ah! you must be one of that tribe that loves the black man."

Through the intercession of one of these men, Sindese Oalea, the head man of a neighbouring village, Mpende, after a long discussion with his councillors, was induced to believe Livingstone's account of himself and his intentions, and to treat him and his party with great generosity and kindness. Skewebu was sent to the chief with a request that he might be permitted to buy a canoe to convey one of his men who was ill. Mpende said, "That white man is truly one of our friends. See how he lets me know his afflictions." "Ah!" said Sekwebu, "if you only knew him as well as we do who have lived with him, you would understand that he highly values your friendship, and that of Mburuma, and as he is a stranger, he trusts in you to direct him." He replied, "Well, he ought to cross to the other side of the river, for this bank is hilly and rough, and the way to Tete is longer on this than on the opposite bank." "But who will take us across if you do not?" "Truly,"" replied Mpende, "I only wish you had come sooner to tell me about him; but you shall cross." And cross they did, leaving the place in very different spirits from those with which they had approached it.

The people here and lower down the river he found well-supplied with cotton goods, which they purchased from the Babisa, a tribe farther to the east, who had been doing all the trade with the interior during the two years the war with the Portuguese had lasted. Beyond the range of hills to the north lived a tribe called Basenga, who are great traders in iron ore; and beyond them again, in a country where the Portuguese had at one time washed for gold, lived a people called Maravi, who are skilful agriculturists, raising in addition to corn and maize, sweet potatoes, which grow to a great size in the fertile soil of the district, and which they have learned to preserve for future use by burying them in the ground, embedded in wood ashes. The ground on the north side of the river appeared to be much more fertile than that in the south. In many places he found evidence that coal was abundant.

A little way down the river they arrived opposite an island belonging to a chief called Mozinkwa; here they were detained by heavy rains, and the

illnesss of one of the Batoka men, who died. He had required to be carried by his fellows for several days, and when his case became hopeless they wanted to leave him alone to die; but to such an inhuman proposal Livingstone could not of course give his consent. Here one of the Batoka men deserted openly to Mozinkwa, stating as his reason, that the Makololo had killed both his father and his mother, and that he would not remain any longer with them.

Towards the end of January they were again on their way; and early in February, as his men were almost in a state of nudity, Livingstone gave two tusks for some calico, marked Lawrence Mills, Lowell, U.S. The clayey soil and the sand-filled rivulets made their progress slow and difficult. The sand rivers are water-courses in sandy bottoms, which are full during the rainy seasons and dry at other times, although on digging a few feet into the bed of the stream, water is found percolating on a stratum of clay. "This," Livingstone says, "is the phenomenon which is dignified by the name of rivers flowing underground." In trying to ford one of these sand rivers—the Zingesi—in flood, he says, "I felt thousands of particles of coarse sand striking my legs, and the slight disturbance of our footsteps caused deep holes to be made in the bed. The water . . . dug out the sand beneath the feet in a second or two, and we were all sinking by that means so deep that we were glad to relinquish the attempt to ford it before we got half way over; the oxen were carried away down to the Zambesi. These sand rivers remove vast masses of disintegrated rock before it is fine enough to form soil. The man who preceded me was only thigh deep, but the disturbance caused by his feet made it breast deep for me. The stream of particles of gravel which struck against my legs gave me the idea that the amount of matter removed by every freshet must be very great. In most rivers where much wearing is going on a person diving to the bottom may hear literally thousands of stones knocking against each other. This attrition, being carried on for hundreds of miles in different rivers, must have an effect greater than if all the pestles and mortar mills of the world were grinding and wearing away the rocks."

The party were now in a district where a species of game-law exists. If an elephant is killed by a stranger, or a man from a neighbouring village living under another chief, the under half of the carcase belongs to the lord of the soil, nor must the hunter commence to cut it up until the chief claiming the half, or one of his headmen, is present. The hind leg of a buffalo, and a large piece of an elephant must be given in like circumstances to the occupier of the land on which they were grazing when shot. The number of rivulets and rivers enable them to mark out their terrritory with great exactness. In this district the huts are built on high stages in the gardens, as a protection from the attacks of lions, hyenas and leopards.

Before leaving the land of a chief named Nyampungo, who had enter-

tained them hospitably, Livingstone's men killed a bull elephant, and had to wait a day until some of the chief's people came to superintend the cutting up and secure his half of the animal. Nyampungo's men brought with them a basket of corn, a fowl, and a few strings of handsome beads as a thank-offering for his having killed the elephant. While they were cutting up and cooking the carcase, a large number of hyenas collected round them at a respectful distance, "and kept up a loud laughter for two nights. I asked my men what the hyenas were laughing at, as they usually give animals credit for a share of intelligence; they said that they were laughing because we could not take the whole, and that they would have plenty to eat as well as us."

Speaking of the birds of Central Africa, he says, "These African birds have not been wanting in song, they have only lacked poets to sing their praise, which ours have had from the time of Aristophanes downwards. Ours have both a classic and a modern interest to enhance their fame. In hot dry weather, or at mid-day, when the sun is fierce, all are still; let, however, a good shower fall, and all burst forth at once into merry lays and loving courtship. The early mornings and the cool evenings are the times for singing."

In the Mopane country they met with numbers of a red-beaked variety of hornbill, which builds its nest in an aperture in a tree. When the nest is built the female retires into it, while the male covers the orifice with clay, all save a narrow slit for the introduction of air and for feeding her, which the devoted bird does until the eggs are hatched. As the female is very fat at such times, the natives search for their nests, and capture and eat them. Lions were abundant, and were treated as privileged animals by the natives, no one attempting to hunt them, as it is supposed that when a chief dies, he can metamorphose himself into a lion.

At the village of a chief called Monina, Monahin, one of Livingstone's men disappeared during the night. As he had been ill for some time and had complained of his head, Livingstone imagined that he had wandered in an insane state, and been picked up by a lion. They prowled about the native settlements at night with great boldness, making it dangerous for any one to be about after dark. He had proved very valuable to Livingstone, and he felt his loss greatly. The general name of the people of this district is Banyai; they are ruled over by several chiefs, the government being a sort of feudal republican. The people of a tribe, on the death of their chief, have the privilege of electing any one, even from another tribe, to be his successor, if they are not satisfied with any of the members of his family. The sons of the chiefs are not eligible for election among the Banyai. The various chiefs of the Banyai acknowledge allegiance to a head chief. At the time of Livingstone's visit, this supreme position was held by a chief called Nyatewe. This custom appears to prevail in South and Central Africa; and if the chief

who wields supreme power is a wise and prudent ruler, the result is highly beneficial.

Among the Banyai the women are treated with great respect, the husband doing nothing that his wife disapproves. Notwithstanding this, a barbarous custom prevails amongst them if a husband suspects his wife of witchcraft or infidelity. A witch-doctor is called, who prepares the infusion of a plant named *goho*, which the suspected party drinks, holding up her hand to heaven in attestation of her innocence. If the infusion causes vomiting, she is declared innocent; but if it causes purging, she is held to be guilty, and burned to death. In many cases the drinking of the infusion causes death. This custom prevails, with modifications, amongst most of the tribes of Central Africa, and is found as far west as Ambaca. When a Banyai marries, so many head of cattle or goats are given to the parents; and unless the wife is bought in this way, the husband must enter the household of his father-in law and do menial offices, the wife and her family having exclusive control of the children. The Banyai men are a fine race; but the superior courage and skill Livingstone's men displayed in hunting, won the hearts of the women; but none of them would be tempted into matrimony, where it involved subjection to their wives.

Several of the chiefs through whose villages they passed occasioned some trouble by disbelieving the statement of Livingstone, that he was unable to make presents. A powerful chief, Nyakoba, who sympathised with their condition, gave them a basket of maize, and another of corn, and provided them with guides to Tete, advising them to shun the villages so as to avoid trouble. This they succeeded in doing till within a few miles of Tete, where they were discovered by a party of natives, who threatened to inform Katolosa, the head chief of the district, that they were passing through the country without leave. A present of two tusks satisfied them, and they were allowed to depart.

Within eight miles of Tete, Livingstone was so fatigued as to be unable to go on, but sent some of his men with his letters of recommendation to the commandant. About two o'clock on the morning of the 3rd of March, the encampment was aroused by the arrival of two officers and a company of soldiers sent with a supply of provisions for the party by the commandant. As Livingstone and his men had been compelled for several days to live on roots and honey, their arrival was most timely. He says, "It was the most refreshing breakfast I ever partook of, and I walked the last eight miles without the least feeling of weariness, although the path was so rough that one of the officers remarked to me, 'This is enough to tear a man's life out of him.' The pleasure experienced in partaking of that breakfast was only equalled by the enjoyment of Mr. Gabriel's bed when I arrived at Loanda. It was also enhanced by the news that Sebastopol had fallen, and the war was finished."

Major Sicard, the Portuguese commandant at Tete, treated Livingstone and his men with the greatest generosity. He clothed himself and his men, and provided them with food and lodgings, declining to receive several tusks which were offered in compensation. As the most of his men were to be left here, Major Sicard gave them a portion of land on which to cultivate their own food, and permission to hunt elephants—the money they made from the tusks and dried meat to be used for the purchase of articles to take to Sekeletu on their return.

Had Livingstone set out on his journey several months earlier he would have arrived in the neighbourhood of Tete during the war between the natives and the Portuguese, when he would have had little chance of escaping with his life. His arrival was not unexpected at Tete, as through Lord Clarendon and the Portuguese minister, Count de Lavradio, the Portuguese authorities on the Zambesi were warned of his expected appearance. A short time previous to his arrival, some natives came down the river to Tete and said, alluding to the sextant and artificial horizon, "that the Son of God had come;" and that he was "able to take the sun down from the heavens and place it under his arm." Major Sicard then felt sure that this was the man mentioned in Lord Clarendon's despatch.

CHAPTER XI.

Stay at Tete.—Senna.—Arrival at Kilimane.—Letters to Sir Roderick Murchison Concerning the People of South and Central Africa, their Language, etc., etc.—Departure for England.

AS Livingstone was in a very emaciated state, and fever was raging at Kilimane, the point on the coast to which he was bound, he was induced to remain at Tete for a month, during which time he occupied himself by making several journeys in the neighbourhood, visiting a coal-field, etc., etc. The village of Tete he found to consist of a large number of wattle-and-daub native huts with about thirty European houses built of stone. The place had declined greatly in importance through the introduction of the slave trade. In former times considerable quantities of wheat, maize, millet, coffee, sugar, oil, indigo, gold dust, and ivory were exported, and as labour was both abundant and cheap the trade was profitable. Livingstone says, "When the slave trade began, it seemed to many of the merchants a more speedy mode of becoming rich to sell off the slaves, than to pursue the slow mode of gold-washing and agriculture; and they continued to export them until they had neither hands to labour nor to fight for them. . . . The coffee and sugar plantations and gold-washings were abandoned, because the labour had been exported to the Brazils." The neighbouring chiefs were not slow to take advantage of the impoverished state of the Portuguese and half-caste merchants of Tete. "A clever man of Asiatic and Portuguese extraction, called Nyaude, had built a stockade at the confluence of the Luenya and Zambesi; and when the commandant of Tete sent an officer with his company to summon him to his presence," they were surrounded and bound hand and foot. The commandant "then armed the whole body of slaves and marched against the stockade of Nyaude," but before they reached it, Nyaude despatched a strong party under his son Bonga, who attacked Tete, plundered and burned the whole town, with the exception of the house of the commandant and a few others, and the church and fort. The women and children having taken refuge in the church were safe, as the natives of this region will never attack a church. The news of this disaster caused a panic among the party before the stockade of Nyaude, and they fled in confusion, to be slain or made captives by Katolosa the head chief of the district to the west of Tete.

Another half-caste chief, called Kisaka, on the opposite bank of the river, near where the merchants of Tete had their villages and principal plantations,

also rebelled, and completed the defeat and impoverishment of the Portuguese. "An attempt was made to punish this rebel, but it was unsuccessful, and he has lately been pardoned by the home government. One point in the narrative is interesting. They came to a field of sugar-cane so large that 4,000 men eating it during two days did not finish the whole. Nyaude kept the Portuguese shut up in their fort for two years, and as he held the command of the river, they could only get goods sufficient to buy food by sending to Kilimane by an overland route along the north bank of the Zambesi." The memory of one man's sufferings in this affair evoked the following from Livingstone—"The mother country did not, in these 'Kaffre wars,' pay the bills, so no one became rich or blamed the missionaries. Major Sicard from his good character had great influence with the natives, and put a stop to the war more than once by his mere presence on the spot. We heard of him among the Banyai as a man with whom they would never fight, because he had a good heart." No doubt the influence of this good and generous man helped Livingstone and his party in their march through the districts which had so recently been disturbed.

In consequence of a sudden change of temperature, Major Sicard and Livingstone and nearly every person in the house suffered from an attack of fever; Livingstone soon recovered, and was unremitting in his attention to the others. His stock of quinine becoming exhausted, his attention was drawn by the Portuguese to a tree called by the natives *kumbanzo*, the bark of which is an admirable substitute. He says, "there was little of it to be found at Tete—while forests of it are at Senna, and near the delta of Kilimane. It seems quite a providential arrangement, that the remedy for fever should be found in the greatest abundance where it is most needed. . . . The thick soft bark of the root is the part used by the natives; the Portuguese use that of the tree itself. I immediately began to use a decoction of the bark of the root; and my men found it so efficacious that they collected small quantities of it for themselves, and kept it in little bags for future use."

On the 22nd of April Livingstone started on his voyage down the river to Killimane, having selected sixteen men from among his party who could manage canoes. Many more wished to accompany him, but as there was a famine at Kilimane in consequence of a failure of the crops, during which thousands of slaves were dying of hunger, he could take no more than was absolutely necessary. The commandant sent Lieutenant Miranda with Livingstone to convey him to the coast. At Senna, where they stopped, they found a more complete ruin and prostration than at Tete. For fifteen miles from the head of the delta of the Zambesi, the Mutu, which is the head waters of the Kilimane river, and was then erroneously supposed to be the only outlet to the Zambesi, was not navigable, and the party had to walk under the hot sun. This together with the fatigue brought on a severe attack

of fever, from which Livingstone suffered greatly. At Interra, where the Pangaze, a considerable river, falls into the Muto, navigation became practicable. The party were hospitably entertained by Senhor Asevedo, "a man who is well known by all who ever visited Kilimane and who was presented with a gold chronometer watch by the Admiralty for his attentions to English officers." He gave the party the use of his sailing launch for the remainder of the journey, which came to its conclusion at Kilimane, on the 20th of May, 1856, "which wanted (Livingstone says) only a few days of being four years since I started from Cape Town." At Kilimane, Colonel Galdino Jose Nunes received him into his house, and treated him with marked hospitality. For three years he had never heard from his family direct, as none of the letters sent had reached him; he had now the gatification of receiving a letter from Admiral Trotter, "conveying information of their welfare, and some newspapers, which were a treat indeed. Her Majesty's brig, the *Frolic*, had called to inquire for me in the November previous, and Captain Nolloth of that ship had most considerately left a case of wine, and his surgeon, Dr. James Walsh, divining what I should need most, left an ounce of quinine. These gifts made my heart overflow. . . . But my joy on reaching the coast was sadly embittered by the news that Commander McLune, of Her Majesty's brigantine *Dart*, in coming into Kilimane to pick me up had, with Lieut. Woodruffe and five men, been lost on the bar. I never felt more poignant sorrow. It seemed as if it would have been easier for me to have died for them, than that they should all have been cut off from the joys of life in generously attempting to render me a service." In speaking of the many kind attentions he received while at Kilimane, he says—"One of the discoveries I have made is that there are vast numbers of good people in the world; and I do most devoutly tender my unfeigned thanks to that gracious One who mercifully watched over me in every position, and influenced the hearts of both black and white to regard me with favour."

Ten of the smaller tusks belonging to Sekeletu were sold to purchase calico and brass wire for the use of his attendants at Tete, the remaining twenty being left with Colonel Nunes, with orders to sell them and give the proceeds to them in the event of his death or failure to return to Africa. Livingstone explained all this to the Makololo, who had accompanied him to Kilimane, when they answered, "Nay, father, you will not die; you will return to take us back to Sekeletu." Their mutual confidence was perfect; they promised to remain at Tete until he returned to them, and he assured them that nothing but death would prevent his rejoining them. The kindness and generosity of the Portuguese merchants and officers have already been alluded to; a continuance of the same was promised to his men during his absence, and it was understood that the young King of Portugal, Don Pedro, as soon as he heard of their being in his territory, sent orders that they

should be maintained at the public expense of the province and Mozambique, until Livingstone should return to claim them.

The following remarks on the influence of locality on the character of peoples, as exemplified by the African tribes he had come in contact with, their language, habits, etc., are extracted from Dr. Livingstone's letters to Sir Roderick Murchison:—

"Perhaps nowhere else do hills seem to exert a more powerful and well-marked influence on national character than they do in Africa. Every one is aware of the brave resistance offered by the Kaffre mountaineers to the British soldiers, than whom I believe there are none more brave beneath the sun. And the whole of the hill tribes, with but few exceptions, possess a similarity of character. They extend chiefly along the eastern side of the continent. Those among whom I have lately travelled have been fighting with the Portuguese for the last two years, and have actually kept the good men of Tete shut up in their fort during most of that time. They are a strong, muscular race, and, from constant work in the gardens, the men have hands like those of English ploughmen. Like hill people in general, they are much attached to the soil. Their laws are very stringent. The boundaries of the lands of each are well defined, and, should an elephant be killed, the huntsman must wait till one comes from the lord of the land to give permission to cut it up. The underlying tusk and half of the carcase are likewise the property of him on whose soil the elephant fell. They may well love their land, for it yields abundance of grain, and here superior wheat and rice may be seen flourishing side by side. Their government is a sort of republican-feudalism, which has decided that no child of a chief can succeed his father. A system of separating the young men from their parents and relatives would have pleased the author of the Cyropædia: yet the frequent application of the ordeal to get rid of a wife no longer loved shows that Xenophon's beau ideal does not produce gallantry equal to that which emanates from the birch of a wrathful village dominie among ourselves. The country towards Mozambique supports people of similar warlike propensities; and if these are owing to an infusion of Arab blood in their veins, that mixture does not seem to have had much influence on their customs, for those are more negro than aught else. They all possess a very vivid impression of the agency of unseen spirits in human affairs, which I believe is especially characteristic of the true negro family.

"Situated more towards the centre of the continent, we have the Bechuana tribes, who live generally on plains. Compared with the Kaffre family, they are all effeminate and cowardly; yet even here we see courage manifested by those who inhabit a hill country. Witness, for example, Sebituane, who fought his way from the Basuto country to the Barotse and to the Bashukulompo. Moshesh showed the same spirit lately in his encounter with English troops. These stand highest in the scale, and certain

poor Bechuanas, named Bakalahari, are the lowest. The latter live on the desert, and some of their little villages extend down the Limpopo. They generally attach themselves to influential men in the Bechuana towns, who furnish them with dogs, spears, and tobacco, and in return receive the skins of such animals as they may kill either with the dogs or by means of pitfalls. They are all fond of agriculture, and some possess a few goats; but the generally hard fare which they endure makes them the most miserable objects to be met with in Africa. From the descriptions given in books, I imagine the thin legs and arms, large abdomens, and the lustreless eyes of their children, make the Bakalahari the counterparts of Australians.

"But though it is all very well, in speaking in a loose way, to ascribe the development of national character to the physical features of the country, I suspect that those who are accustomed to curb the imagination in the severe way employed to test for truth in the physical sciences would attribute more to race or breed than to mere scenery. Look at the Bushmen—living on the same plains, eating the same food, but oftener in scantier measure, and subjected to the same climatorial and physical influences as the Bakalahari, yet how enormously different the results! The Bushman has a wiry, compact frame; is brave and independent; scorns to till the ground or keep domestic animals. The Bakalahari is spiritless and abject in demeanour and thought, delights in cultivating a little corn or pumpkins, or in rearing a few goats. Both races have been looking at the same scenes for centuries. Two or three Bechuanas from the towns enter the villages of the Bakalahari, and pillage them of all their skins of animals without resistance. If by chance the Bechuanas stumble on a hamlet of Bushmen, they speak softly, and readily deliver up any tobacco they may have as a peace-offering, in dread of the poisoned arrow which may decide whether they spoke truly in saying they had none.

"Again, look at the river Zouga, running through a part of the Bushman and Bakalahari desert. The Bayeiye or Bakoba live on its reedy islets, cultivate gardens, rear goats, fish and hunt alternately, and are generally possessed of considerable muscular development. Wherever you meet them they are always the same. They are the Quakers of the body politic in Africa. They never fought with any one, but invariably submitted to whoever conquered the lands adjacent to their rivers. They say their progenitors made bows of the castor-oil plant, and they broke; '*therefore* (!) they resolved never to fight any more.' They never acquire much property, for every one turns aside into their villages to eat what he can find. I have been in their canoes and found the pots boiling briskly until we came near to the villages. Having dined, we then entered with the pots empty, and they looked quite innocently on any strangers who happened to drop in to dinner. Contrast these Friends with the lords of the isles, Sekote and others, living among identical circumstances, and ornamenting their dwellings with human skulls.

"The cause of the difference observed in tribes inhabiting the same localities, though it spoils the poetry of the thing, consists in certain spots being the choice of the race or family. So when we see certain characters assembled on particular spots, it may be more precise to say we see the antecedent disposition manifested in the selection, rather than that the part chosen produced a subsequent disposition. This may be evident when I say that, in the case of the Bakalahari and Bushmen, we have instances of compulsion and choice. The Bakalahari were the first body of Bechuana emigrants who came into the country. They possessed large herds of very long-horned cattle, the remains of which are now at Ngami. A second migration of Bechuanas deprived them of their cattle and drove them into the desert. They still cleave most tenaciously to the tastes of their race; while, for the Bushman, the desert is his choice, and ever has been from near the Coanza to the Cape. When we see a choice fallen on mountains, it means only that the race meant to defend itself. Their progenitors recognised the principle, acknowledged universally, except when Kaffre police or Hottentots rebel, viz., that none deserve liberty except those who are willing to fight for it. This principle gathers strength from locality, tradition develops it more and more, yet still I think the principle was first, foremost, and alone vital.

"In reference to the origin of all these tribes, I feel fully convinced, from the very great similarity in all their dialects, that they are essentially one race of men: the structure, or we may say the skeletons, of the dialects of Kaffre, Bechuana, Bayeiye, Barotse, Batoka, Batonga or people of the Zambesi, Mashona, Babisa, the negroes of Londa, Angola, and people on the west coast are all wonderfully alike. A great proportion of the roots is identical in all.

"The Bushman tongue seems an exception, but this, from the little I can collect of it, is more apparent than real. While all the others are developed in one and nearly the same direction, this deviates into a series of remarkable klicks. The syllable on which, in other dialects, the chief emphasis is put, in this sometimes constitutes the whole word. But though the variations lie in klicks, the development is greater than in the other dialects. They have for instance, the singular, plural, and dual numbers; the masculine, feminine, and neuter genders; and the aorist tense; which the others have not.

"Tending in the same way as this indisposition to diseases which decimate tribes which are passing away, is the fact that the Africans are wonderfully prolific. The Bushmen are equally so, but the Bechuanas are an exception which the introduction of Christianity may remove. As this has not, it is reported, happened in the Pacific, the data on which our hopes are founded may prove deceptive.

"With respect to the perpetuity of the African race, we have stronger hope than in the case of the South Sea Islanders, and other savage nations in

contact with Europeans. The well-known preference that fever manifests for the natives of Northern Europe, and the indisposition it exhibits to make victims of Africans, would lead persons resident in one region of this continent to say that the white race was doomed to extinction. However to be explained, the Africans who have come under my observation are not subject to many of the diseases which thin our own numbers. Smallpox and measles paid a passing visit through the continent some thirty years ago; and though they committed great ravages, they did not remain endemic nor return. They did not find a congenial soil; and though the period preceding the rains is eminently epidemic in its constitution, excepting hooping cough, no epidemic known in Europe appears. There is an indisposition independent of climatic influences, which becomes, I imagine, evident, when a certain loathsome disease is observed to die out spontaneously in Africans of pure blood; and those of mixed blood are subjected to all its forms with a virulence exactly proportioned to the amount of European blood in their veins.

"Strangers are so liable to be unintentionally misled by the careless answers of uninterested inhabitants, I would fain have subjected every important point to the test of personal examination, but except in the cases of gold, coal, iron, and a hot fountain, which did not involve any additional fatigue, I had to rely on the information of others alone. The difference of climate must account for the disproportionate exhaustion experienced by myself and companions from marches of a dozen miles, compared with that produced in our naval officers by those prodigious strides we read of having been performed in the Arctic Circle. Indeed I was pretty well 'knocked up' by not much more than a month on foot; the climate on the river felt hot and steamy, water never cools, clothes always damp from profuse perspiration; and as the country is generally covered with long grass, bushes, and trees, the abundance of well-rounded shingle everywhere renders it necessary to keep the eyes continually on the ground. Pedestrianism under such circumstances might be all very well for those whose obesity calls for the process of Pressneitz; but for one who had become as lean as a lath, the only discernible good was that it enabled an honest sort of man to gain a vivid idea of 'a month on the treadmill.'"

Dr. Livingstone soon concluded that Kilimane was not the proper position for the port of the Zambesi, but he was not then aware that another and a better mouth of the river, only known to themselves, was used for the exportation of slaves. He says:—

"The Portuguese, in extenuation of the apparent disadvantage of building the 'capital of the rivers of Senna' (Kilimane) where it possesses such slender connection with the Zambesi, allege that the Mutu in former times was large, but it is now filled up with alluvial deposit. The bar, too, was safer then than it is now. To a stranger it looks remarkable that the main stream of the

Zambesi, sometimes called Cuama and Luabo, which is, at least, three quarters of a mile broad at the mouth of the Mutu, should be left to roll on to the ocean unused. It divides, it is true, below that into six or seven branches; but two of these named, near the sea, Melambe and Catrina, present comparatively safe harbours at their mouths and free passage into the interior for large launches during the entire year. These harbours are not more insalubrious than Kilimane and Senna.

"With respect to Kilimane, one could scarcely have found a more man-killing spot than it. The village is placed on a large mudbank, so moist that water is found by digging two feet deep, and it is surrounded by mango-bushes and marsh. The walls of the houses, too, sink gradually, so as to jam the doors against the floors. That the subject of securing a better harbour for the commerce of the magnificent country drained by the Zambesi merits the attention of the Portuguese Government, as interested in its prosperity, a glance at the articles which might be exported to a great amount will sufficiently show.

"*Coal.*—The disturbances effected by the eruptive rocks in the grey sandstone have brought many seams of coal to the surface. There are no fewer than nine of these in the country adjacent to Tete, and I came upon two before reaching that point. One seam in the rivulet Muatise is 58 inches in diameter; another is exposed in the Morongoze, which, as well as the Muatize, falls into the Revubue, and that joins the Zambesi from the north about two miles below Tete. The Revubue is navigable for canoes during the whole year, and but for a small rapid in it, near the points of junction with these rivulets, canoes might be loaded at the seams themselves. Some of the rocks have been ejected in a hot state since the deposition of the coal, for it is seen in some spots converted into coke, and about ten miles above Tete there is a hot fountain emitting abundance of acrid steam; the water at the point of emergence is 158° Fahr., and when the thermometer is held in it half a minute it shows steadily 160° When frogs or fish leap into it from the rivulet in which it is situated, they become cooked, and the surrounding stones were much too hot for the bare feet of my companions.

"The remarks about the absence of any tradition of earthquakes in my last letter must be understood in reference to the country between the ridges alone, for I find that shocks have frequently been felt in the country of the Maravi, and also at Mozambique, but all have been of short duration, and appeared to pass from east to west.

"*Iron.*—In addition to coal, we have iron of excellent quality in many parts of the country. It seems to have been well roasted in the operations of nature, for it occurs in tears or rounded masses, admitting of easy excavation with pointed sticks, and it shows veins of the pure metal in its substance. When smelted it closely resembles the best Swedish iron in colour and tough-

ness. I have seen spears made of it strike the crania of hippopotami and curl up instead of breaking, the owner afterwards preparing it for further use by straightening it, while cold, with two stones.

"*Gold.*—If we consider Tete as occupying a somewhat central position in the coal-field, and extend the leg of the compasses about $3\frac{1}{2}^{\circ}$, the line which may then be described from north-east round by west to south-east nearly touches or includes all the district as yet known to yield the precious metal. We have five well-known gold-washings from north-east to north-west. There is Abutua, not now known, but it must have been in the west or south-west, probably on the flank of the eastern ridge. Then the country of the Bazizula, or Mashona, on the south, and Manica on the south-east. The rivers Mazoe, Luia, and Luenya in the south, and several rivulets in the north, bring gold into the coal-field with their sands; but from much trituration it is generally in such minute scales as would render amalgamation with mercury necessary to give it weight in the sand, and render the washing profitable. The metal in some parts in the north is found in red clay-shale which is soft enough to allow the women to pound it in wooden mortars previous to washing. At Mashinga it occurs in white quartz. Some of the specimens of gold which I have seen from Manica and the country of Bazizula (Mosusurus) were as large as grains of wheat, and those from rivers nearer Tete were extremely minute dust only. I was thus led to conclude that the latter was affected by transport, and the former showed the true gold-field as indicated by the semicircle. Was the eastern ridge the source of the gold, seeing it is now found not far from its eastern flank?

"We have then at present a coal-field surrounded by gold, with abundance of wood, water, and provisions—a combination of advantages met with neither in Australia nor California. In former times the Portuguese traders went to the washings accompanied by great numbers of slaves, and continued there until their goods were expended in purchasing food for the washers. The chief in whose lands they laboured expected a small present—one pound's worth of cloth perhaps—for the privilege. But the goods spent in purchasing food from the tribe was also considered advantageous for the general good, and all were eager for these visits. It is so now in some quarters, but the witchery of slave-trading led to the withdrawal of industry from gold-washing and every other source of wealth; and from 130 to 140 lbs. annually, the produce has dwindled down to 8 or 10 lbs. only. This comes from independent natives, who wash at their own convenience, and for their own profit.

"A curious superstition tends to diminish the quantity which might be realised. No native will dig deeper than his chin, from a dread of the earth falling in and killing him; and on finding a piece of gold it is buried again, from an idea that without this 'seed' the washing would ever afterwards prove unproductive. I could not for some time credit this in people who know right

well the value of the metal; but it is universally asserted by the Portuguese, who are intimately acquainted with their language and modes of thought. It may have been the sly invention of some rogue among them, who wished to baulk the chiefs of their perquisites, for in more remote times these pieces were all claimed by them.

"*Agriculture.*—The soil formed by the disintegration of igneous rocks is amazingly fertile, and the people are all fond of agriculture. I have seen maize of nearly the same size of grain as that sold by the Americans for seed in Cape Town. Wheat, for which one entertains such a friendly feeling, grows admirably near Tete, in parts which have been flooded by the Zambesi, and it doubles the size of the grain at Zumbo. When the water retires the sowing commences. A hole is made with a small hoe, a few grains dropped in, and the earth pushed back with the foot. This simple process represents all our draining, liming, subsoil-ploughing, &c.; for with one weeding a fine crop is ready for the sickle in four months afterwards.

"Wheat, sugar, rice, oil, and indigo were once exported in considerable quantities from Tete. Cotton is still cultivated, but only for native manufacture. Indigo of a large kind grows wild all over the country. There are forests of a tree which acts as the cinchona near Senna. Does not this show the Divine care over us?—where fever prevails the remedy abounds. We have also sarsaparilla, calumba-root, and senna leaves in abundance; the last I believe to be the same as is exported from Egypt.

"It may not be out of place here to call attention to native medicines as worthy the investigation of travellers. I have always had to regret the want of time to ascertain which were efficacious and which were not, and whether there are any superior to our own. It is worthy of note that the bark, which is similar in properties to that which yields the quinine, has been known as a potent febrifuge by the natives from time immemorial. Our knowledge of the virtues of the bark is comparatively recent. Some may think we have more medicines in the Pharmacopœia than we know well how to use, but the fact of well-educated persons resorting to Homœopathy, Holloway's ointment, Morison's pills, and other nostrums, may indicate an actual want, to be supplied by something more potent than either raillery or argument. Few such I imagine would in cool blood prefer Parr's life pills to quinine in intermittent fever; and if we had a remedy for cholera only half as efficacious as quinine in Kilimane fever, it would be esteemed a universal blessing. Many native remedies are valueless, perhaps the majority are so; but they can cure wounds inflicted by poisoned arrows. In Inhambane and Delagoa Bay a kind of croup prevails: it is probably the Laringismus stridulus, as it attacks and proves very fatal to adults. Singularly enough, it was unknown till the first visit of Potgeiter's Boers to Delagoa Bay, who brought it from parts to the south-west where it prevails, and left it there, though none of

them were suffering from it at the time. It is still unknown here. This case is analogous to ships leaving diseases at the South Sea Islands. After many had perished, a native doctor pointed out a root which, when used in time, effects a speedy cure. The Portuguese now know the remedy and value it highly. I am not disposed to believe everything marvellous; but from excoriations having been made, by means of the root, on the tongue of the patient, and abstraction of blood so near the seat of the disease having been successful in this very intractable disease, I think the black doctor deserves some credit. The fact, too, that certain plants are known by widely separated tribes all over the country as medicinal, is an additional reason for recommending those who have nothing but travel and discovery on hand to pick up whatever fragments of aboriginal medical knowledge may come in their way.

"In addition to the articles of commerce mentioned above, I saw specimens of gum copal, orchilla-weed, caoutchouc, and other gums. There are two plants, the fibres of which yield very strong thread and ropes. Bees abound beyond Tete, but the people eat the honey and throw the wax away. There are several varieties of trees which attain large dimensions, yielding timber of superior quality for durability in shipbuilding. I saw pure negroes at Senna cutting down such trees in the forest, and building boats on the European model, without the superintendence of a master. Other articles of trade are mentioned by writers, but I refer to those only which came under my personal observation.

"I feel fully persuaded that, were a stimulus given to the commerce of the Zambesi by a small mercantile company proceeding cautiously to develop the resources of this rich and fertile country, it would certainly lead to a most lucrative trade. The drawbacks to everything of this sort must, however, be explicitly stated: and though anxious to promote the welfare of the teeming population of the interior by means of the commercial prosperity and intercourse of the coasts, I should greatly regret any undue expectations from unconsciously giving a too high colouring to my descriptions. I shall therefore try to explain the causes of the miserable state of stagnation and decay in which I found the Portuguese possessions.

"I have already stated that the slave-trade acted by withdrawing labour from every other source of wealth in this country, and transferring it to the plantations of Cuba and Brazil. The masters soon followed the slaves; hence this part of Africa contains scarcely any Europeans possessing capital and intelligence or commercial enterprise. Of those who engaged in the slave-trade in both eastern and western Africa, it is really astonishing to observe how few have been permanently enriched by it. There seems a sort of fatality attending these unlawful gains, for you again and again hear the remark, 'He *was* rich in the time of the slave-trade.' Beyond all question, it has impoverished both the colonists and the country. And when our cruisers, by their

indomitable energy, rendered the traffic much more perilous than any other form of gambling for money, they conferred a double benefit. The slave was prevented from being torn from his home and country, and the master was compelled to turn to more stable sources of income and wealth. But when this took place it was found that the strong arms which washed for gold and cultivated coffee, cotton, wheat, indigo, sugar, earthnuts for oil, &c., were across the Atlantic, and a civil war breaking out completed the disorder.

"Our explanations were, however, considered satisfactory; indeed, when we could get a palaver, they were never unreasonable until we came close to Tete; but it was unpleasant to be everywhere suspected. The men belonging to some chiefs on the Zambesi never came near us unless fully armed; others would not sit down, nor enter into any conversation, but after gazing at us for some time with a sort of horror they went off to tell the chief and great men what they had seen. We appeared an uncouth band, for the bits of skins, *alias* fig-leaves, had in many cases disappeared, and my poor fellows could not move about without shocking the feelings of the well-clothed Zambesians. The Babisa traders (Muizas) bring large quantities of cotton cloth from the coast to the tribes beyond Zumbo. Both Moors and Babisa had lately been plundered too. They could not have taken much from us, for the reason contained in the native proverb, 'You cannot catch a humble cow by the horns.' We often expected bad treatment, but various circumstances conspired to turn them from their purposes.

"It is impossible to enumerate all the incidents which, through the influence of our Divine protector on the hearts of the heathen, led to our parting in friendship with those whom we met with very different sentiments; but I must not omit the fact that, if our cruisers had accomplished nothing else, they have managed to confer a good name on our country. I was quite astonished to find how far the prestige had spread into the continent; and in my case they had ocular demonstration of more than a hundred evidently very poor men going with one of 'that white tribe' without either whip or chain. My headman speaks the language perfectly, and being an intelligent person, he contributed much by sensible explanations to lull suspicion. We had besides no shields with us; this was often spoken of, and taken as evidence of friendly intentions; and for those who perversely insisted that we were spies, we had forty or fifty gallant young elephant-hunters, and the extraordinary bravery they sometimes exhibited seemed to say it would scarcely be wholesome to meddle with such fellows. The personal character of some chiefs led at once to terms of friendship. With others we spent much time in labouring in vain to convince them we were not rogues and vagabonds: they were in the minority, as the utterly bad are everywhere else. With fair treatment the inhabitants on the Zambesi would, I believe, act justly; they are not powerful as compared with our Kaffres of the Cape."

After waiting about six weeks at Kilimane, the *Frolic* arrived, bringing abundant supplies for all his needs, and £150 to pay his passage home, from the agent of the London Missionary Society at the Cape. The admiral at the Cape sent an offer of a free passage to the Mauritius, which Livingstone gladly accepted. As six of the eight of his attendants who had accompanied him to Kilimane had, by his instructions, gone back to Tete to await his return, while the other eight who had accompanied him as far as the delta of the Zambesi had also returned, only two were left with him when the *Frolic* arrived. One of these was Sekwebu, who had been so useful throughout the journey that he determined to take him to England with him, so that he might be able to tell Sekeletu and the Makololo what sort of country England was, and further increase the confidence and trust already reposed in him and in his countrymen generally. The other one begged hard to be permitted to accompany them, and it is a matter for regret that the expense alone prevented Livingstone from acceding to his wishes. There was a heavy sea on when they crossed the bar to the *Frolic*, and as this was Sekwebu's first introduction to the ocean he appeared frightened. On board ship he seemed to get accustomed to his novel situation, picked up a few words of English, and ingratiated himself with the crew, who treated him with great kindness.

During all this time there was, although unnoticed, a strain upon his untutored mind, which reached its climax when a steamer came out to tow the *Frolic* into the harbour at the Mauritius. The terror evoked by the sight of the uncouth panting monster with its volume of smoke culminated in madness, and he descended into a boat alongside. On Livingstone following him to bring him back, he said, "No! no! it is enough that I die alone. You must not perish; if you come I shall throw myself into the water." Noticing then that his mind was affected, Livingstone said, "Now Sekwebu, we are going to Ma-Robert." This had a calming effect upon his mind, and he said "Oh, yes; where is she? and where is Robert?" (Livingstone's son). The officers proposed to put him in irons for a time; but Livingstone, fearing that this would wound his pride, and that it might be said in his own country that he had bound him like a slave, unfortunately would not consent to this. "In the evening a fresh accession of insanity occurred; he tried to spear one of the crew, then leaped overboard, and, though he could swim well, pulled himself down hand under hand, by the chain cable. We never found the body of Sekwebu."

At the Mauritius, Livingstone was hospitably entertained by Major-Gen. C. M. Hay, and was induced to remain some time there to recruit his shattered health. On the 12th of December, 1856, he arrived in England after an absence of seventeen years, the Peninsular and Oriental Steam Company generously refunding his passage money, when made aware of the distinguished personage they had had the honour of carrying. On the day pre-

ceding his arrival the *Times* informed the country that—"The Rev. Dr. Livingstone had arrived at Marseilles from Tunis, on the 6th inst., and was then in good health; his left arm is, however, broken and partly useless, it having been torn by a lion. When he was taken on board the *Frolic* on the Mozambique coast, he had great difficulty in speaking a word of English, having disused it so long while travelling in Africa. He had with him a native from the interior of Africa. This man, when he got to the Mauritius, was so excited with the steamers, and various wonders of civilization, that he went mad, and jumped into the sea and was drowned. Dr. Livingstone had been absent from England seventeen years. He crossed the great African continent almost in the centre, from west to east, has been where no civilized being has ever been before, and has made many notable discoveries of great value. He travelled in the twofold character of missionary and physician, having obtained a medical diploma. He is rather a short man, with a pleasing and serious countenance, which betokens the most determined resolution. He continued to wear the cap which he wore while performing his wonderful travels. On board the *Candia*, in which he voyaged from Alexandria to Tunis, he was remarkable for his modesty and unassuming manners. He never spoke of his travels except in answer to questions. The injury to his arm was sustained in the desert while travelling with a friendly tribe of Africans. A herd of lions broke into their camp at night, and carried off some of their cattle. The natives, in their alarm, believed that a neighbouring tribe had bewitched them. Livingstone taunted them with suffering their losses through cowardice, and they then turned to face and hunt down the enemy. The Doctor shot a lion, which dropped wounded. It afterwards sprang on him, and caught him by the arm, and, after wounding two natives who drew it off him, it fell down dead. The wounded arm was not set properly, and Dr. Livingstone suffered excruciating agony in consequence."

CHAPTER XII.

Dr. Livingstone in England—Special Meeting of the Geographical Society—Enthusiastic Reception—Farewell Banquet—Sir Roderick Murchison's Estimate of Dr. Livingstone and his Labours.

AT Cape Town a meeting was held on the 12th of November, 1856, for the purpose of taking steps to express the public sense of the eminent services rendered to science, civilisation, and Christianity by Dr. Livingstone. Sir George Grey, the governor, who occupied the chair, said:—"I think no man of the present day is more deserving of honour than Dr. Livingstone—a man whom we indeed can hardly regard as belonging to any particular age or time, but who belongs rather to the whole Christian epoch—possessing all those qualities of mind, and that resolute desire at all risks to spread the gospel, which we have generally been in the habit of attributing solely to those who lived in the first ages of the Christian era. Indeed, that man must be of almost apostolic character, who, animated by a desire of performing his duty to his Maker and to his fellow-men, has performed journeys which we cannot but regard as altogether marvellous." The Bishop of Cape Town, the judges, and other government officials took part in the proceedings, which were of a most enthusiastic character. The meeting resolved to enter into a subscription for a testimonial to the great traveller, which Sir George Grey headed with a donation of £50.

In England, curiosity had been excited by the appearance of short paragraphs in the newspapers treating of his discoveries, but it was not until a meeting of the Royal Geographical Society on which occasion the Society's gold medal was presented to the distinguished traveller, that the magnitude of his discoveries and the heroic character of the man came to be properly understood.

It was on the 15th of December, 1856, that the special meeting of the Royal Geographical Society was held to receive and do honour to Dr. Livingstone. The proceedings at this meeting were of so singularly exceptional a character, that we do not hesitate to re-produce the report of it here as it appeared in the "Proceedings of the Royal Geographical Society."

Sir Roderick Murchison, the President of the Society, was in the chair, and the room was filled with a distinguished assemblage. In opening the meeting the President said:—

GENTLEMEN,—We are now specially assembled to welcome Dr. Living-

stone, on returning from Southern Africa to his native country after an absence of sixteen years, during which, while endeavouring to spread the blessings of Christianity through lands never before trodden by the foot of a British subject, he has made discoveries of incalculable importance, which have justly won for him, our Victoria or Patron's Medal.

When that honour was conferred in May, 1855, for traversing South Africa from the Cape of Good Hope, by Lake Ngami and Linyanti to Loanda on the west coast, the Earl of Ellesmere, then our president, spoke with eloquence of the "scientific precision, with which the unarmed and unassisted English missionary had left his mark on so many important stations of regions hitherto blank."

If for that wonderful journey, Dr. Livingstone was justly recompensed with the highest distinction we could bestow, what must be our estimate of his prowess, now that he has re-traversed the vast regions, which he first opened out to our knowledge? Nay, more; that, after reaching his old starting point at Linyanti in the interior, he has followed the Zambesi, or continuation of the Leeambye river, to its mouths on the shores of the Indian Ocean, passing through the eastern Portuguese settlements to Kilimane—thus completing the entire journey across South Africa. In short, it has been calculated that, putting together his various journeys, Dr. Livingstone has not travelled over less than eleven thousand miles of African ground.

Then, how does he come back to us? Not merely like the far-roaming and enterprising French missionaries, Huc and Gabet, who, though threading through China with marvellous skill, and contributing much to our knowledge of the habits of the people, have scarcely made any addition to the science of physical geography; but as the pioneer of sound knowledge, who, by astronomical observations, has determined the site of numerous places, hills, rivers, and lakes, nearly all hitherto unknown to us.

In obtaining these results, Dr. Livingstone has farther seized upon every opportunity of describing to us the physical features, climatology, and geological structure of the countries he has explored, and has made known their natural productions, including vast breadths of sugar-cane and vine-producing lands. Pointing out many new sources of commerce, as yet unknown to the enterprise of the British merchant, he gives us a clear insight into the language, manners, and habits of numerous tribes, and explains to us the different diseases of the people, demonstrating how their maladies vary with different conditions of physical geography and atmospheric causes.

Let me also say that he has realised, by positive research, that which was necessarily a bare hypothesis, and has proved the interior of Southern Africa to be a plateau traversed by a network of lakes and rivers, the waters of which, deflected in various directions by slight elevations, escape to the eastern and western oceans, by passing through deep rents in the hilly,

flanking tracts. He teaches us that these last high grounds, differing essentially from the elevated central region, as well as from the rich alluvial deltas of the coasts, are really salubrious, or, to use his own language, are perfect *sanatoria.*

I have thus alluded, in the briefest manner, to the leading additions to our knowledge which have been brought before you by Dr. Livingstone. The reading of the last letters, addressed to myself, was, by the direction of my lamented predecessor, Admiral Beechey, deferred until the arrival of the great traveller; in order that the just curiosity of my associates might be gratified by having it in their power to interrogate him upon subjects of such deep importance; and, above all, that we might commit no mistakes in hastily constructing maps from immature data; certain sketch maps having been sent to us, before it was possible to calculate his observations and reduce them to order.

Passing then from this meagre outline of the results to science, what must be our feelings as men, when we mark the fidelity with which Dr. Livingstone kept his promise to the natives who, having accompanied him to St. Paul de Loando, were reconducted by him from that city to their homes? On this head my predecessors and myself have not failed, whenever an opportunity occurred, to testify our deep respect for such noble conduct. Rare fortitude and virtue must our medallist have possessed, when—having struggled at the imminent risk of life through such obstacles, and escaping from the interior, he had been received with true kindness by our old allies the Portuguese at Angola—he nobly resolved to redeem his promise, and retrace his steps to the interior of the vast continent. How much, indeed, must the moral influence of the British name be enhanced throughout Africa, when it has been promulgated that our missionary has thus kept his plighted word to the poor natives who faithfully stood by him!

Turning to Dr. Livingstone, the PRESIDENT then said—Dr. Livingstone, it is now my pleasing duty to present to you this our Patron's or Victoria Medal, as a testimony of our highest esteem. I rejoice to see on this occasion, such a numerous assemblage of geographers and distinguished persons, and that our meeting is attended by the ministers of foreign nations. Above all, I rejoice to welcome the representative of that nation whose governors and subjects, in the distant regions of Africa, have treated you as a brother, and without whose aid many of your most important results could not have been achieved. Gladdened must be the hearts of all the geographers present, when they see you attended by men, who accompanied and aided you in your earliest labours. I allude particularly to our own fellows, Colonel Steele, Mr. Cotton Oswell, and Captain Vardon, who are now with us. As these and other distinguished African travellers are in this room, and among them Dr. Barth, who alone of living men, has reached Timbuctoo and returned, may

not the Geographical Society be proud of such achievements? I therefore, heartily congratulate you, sir, on being surrounded by men, who certainly are the best judges of your merits, and I present to you this medal, as a testimony of the high admiration with which we all regard your great labours.

DR. LIVINGSTONE replied:—Sir, I have spoken so little in my own tongue for the last sixteen years, and so much in strange languages, that you must kindly bear with my imperfections in the way of speech-making. I beg to return my warmest thanks for the distinguished honour you have now conferred upon me, and also for the kind and encouraging expressions with which the gift of the gold medal has been accompanied. As a Christian missionary, I only did my duty, in attempting to open up part of southern inter-tropical Africa to the sympathy of Christendom; and I am very much gratified by finding in the interest, which you and many others express, a pledge that the true negro family, whose country I traversed, will yet become a part of the general community of nations. The English Government and the English people, have done more for Central Africa than any other, in the way of suppressing that traffic, which has proved a blight to both commerce and friendly intercourse. May I hope that the path which I have lately opened into the interior, will never be shut; and that in addition to the repression of the slave trade, there will be fresh efforts made for the development of the internal resources of the country? Success in this, and the spread of Christianity, alone will render the present success of our cruisers in repression, complete and permanent. I cannot pretend to a single note of triumph. A man may boast when he is pulling off his armour, but I am just putting mine on; and while feeling deeply grateful for the high opinion you have formed of me, I fear that you have rated me above my deserts, and that my future may not come up to the expectation of the present. Some of the fellows of your society—Colonel Steele, Captain Vardon, and Mr. Oswell, for instance—could, either of them, have effected all that I have done. You are thus not in want of capable agents. I am, nevertheless, too thankful now, that they have left it to me to do. I again thank you for the medal, and hope it will go down in my family as an heirloom worth keeping.

The RIGHT HON. H. LABOUCHERE, M.P., Her Majesty's Secretary of State for the Colonies, then said,—Sir Roderick Murchison, I thought it a great privilege to be allowed to attend to-night upon your invitation; and certainly with little expectation that I should be called upon to address you on this interesting occasion. I am happy to say, however, that the resolution which has been put into my hands, and which I have been requested to propose to the meeting, is one that I am sure will require no arguments of mine to recommend it to your very cordial adoption. You have heard from the president, how the distinguished traveller, who is here to-day to give an account of the achievements which he has performed on the field of Africa,

you have heard, how cordially and usefully he was assisted by the Governors of the Portuguese Establishments on the coast of Africa. There is, perhaps, no nation which can boast more than Portugal, of having largely contributed to early geographical enterprise, to our better knowledge of the globe which we inhabit, and to the spread of commerce throughout the earth. I may also say that the mention of the name of Portugal, is always agreeable to British ears, because there is no country with which we are united by an older, by a closer, and, I trust, by a more enduring connection. I think it is fortunate and gratifying to us, on the present occasion, that we have the advantage of having among us, the distinguished nobleman who represents Portugal in this country; therefore, we shall be able to convey to the Portuguese authorities, through him, the acknowledgment which, I am sure, we must be all anxious to make on the present occasion. I am too well aware of the value of your time, and of the superior claims that others have upon it, to be desirous of addressing you at any length. Of the importance of the discoveries made in Africa, I am sure we must all feel the strongest and deepest sense; it is, at all events, a matter of liberal curiosity to all men, to obtain a better knowledge of our earth. But there are interests very dear to the people of this country, which are closely connected with everything that relates to a better knowledge of Africa. There is none, I believe, which has taken a faster hold on the people of Britain than, not only to put a stop to the horrible traffic in slaves, which was once the disgrace of our land as much, if not more than of any other; but also, as far as possible, to repay to Africa the debt which we owe her, by promoting in every manner, with regard to her inhabitants, the interests of civilization and commerce. We must feel how important a better knowledge of the internal resources and of the condition of Africa must be, in all the efforts which Parliament or statesmen can make in that direction. I will not trespass longer upon your time, but conclude by reading the resolution which has been placed in my hands, and which is one that I am sure will meet from you, a very cordial reception:—

"That the grateful thanks of the Royal Geographical Society be conveyed, through his Excellency Count de Lavradio, the Minister of the King of Portugal, to His Majesty's Authorities in Africa, for the hospitality and friendly assistance they afforded to Dr. Livingstone, in his unparalleled travels from St. Paul de Loanda to Tete and Kilimane, across that continent."

Sir HENRY RAWLINSON, F.R.G.S., then said—Sir, I could have wished that the task of seconding the resolution had been confided to abler hands; but since the president has issued his orders—orders which are equivalent to the laws of the Medes and the Persians, with which I am tolerably well acquainted,—I am obliged humbly to bow to the task. After the eloquent description you have heard of the merits of the Portuguese nation, it would

ill become me to intrude long upon your time; but I would wish to call your attention to the really great obligations which science is generally under to the Portuguese, especially with regard to the geography of Africa. We are too apt to forget the debt of gratitude which we owe to them for our knowledge of the interior of Africa, almost up to the present time, when Dr. Livingstone has completed the chain of their discoveries. We must remember that it was Vasco de Gama, a Portuguese, in the first instance, who doubled the Cape of Good Hope. The Portuguese have established settlements throughout Southern Africa from the earliest times down to the present, and until Dr. Livingstone has laid down all his discoveries upon the map, the old Portuguese maps of the interior of Africa, especially the southern portion, are the best available. It is singularly interesting and gratifying to find, that it should be to the Portuguese Governors, that we are indebted for the hospitable reception, which they gave to our distinguished traveller, Dr. Livingstone, and which has enabled him to return home in safety, and acquaint us with the results of all his discoveries. As you are about to hear from Dr. Livingstone some brief account of his travels, I will not longer trespass on your time, but merely second the resolution which has been submitted to your notice.

The resolution having been put from the chair, was carried unanimously.

The Count de Lavradio then rose, and after a brief apology in English for his want of fluency in our language, thus spoke in French:—

"Mr. President,—As I did not expect to have the honour of speaking before you, it is with great hesitation and timidity that I rise to address a few words to you, in order to express my gratitude for the resolution you have just adopted. My first duty is to return my sincere and hearty thanks to the Right Hon. Mr. Labouchere, in the name of the Sovereign, whom I have the honour to represent, and in that of the Portuguese nation, to which I belong, not only for the resolution which he has proposed—that the Royal Geographical Society should adopt—but also for the sentiments of admiration and esteem which he has so well expressed for the memory of the intrepid and learned Portuguese navigators, who, in discovering seas and lands, till then unknown, carried everywhere the germs of civilization, and rendered very great services to science. I also beg Sir H. Rawlinson to accept my best thanks for the kindness with which he has supported the proposition of Mr. Labouchere, in recalling to the remembrance of the society the important discoveries made by the Portuguese. My warmest thanks are also due to you, Mr. President, for the good-will with which you have submitted the proposition of Mr. Labouchere to the society; and to you, gentlemen, the members of the Royal Geographical Society, for the unanimity of your approbation. I assure you, I shall hasten to transmit to my Government the resolution just adopted, and I feel sure it will be much flattered by it. When

A RHINOCERUS HUNT

I learned that Dr. Livingstone was going to endeavour to traverse Southern Africa from the western to the eastern shore, I wrote to my Government, praying it to dispatch the most positive orders, that all the Portuguese colonies should lend Dr. Livingstone all the protection he should require, to enable him to pursue his travels in a safe and comfortable manner. I am happy to learn that the orders of my Government have been executed. And now, Mr. President, and gentlemen, the members of the Royal Geographical Society, permit me to thank you in my own name, for the honour you have conferred upon me in inviting me to this assembly. At any time I should be very happy and highly honoured to find myself among the *elite* of the learned English geographers and travellers; but, to-day, my happiness is still greater since this august assembly is particularly called to celebrate the return of Dr. Livingstone to Europe—this courageous savant—this friend of humanity, who, braving the greatest dangers, exposing himself to all sorts of privations, employed the best years of his life in exploring Central Africa, with the single-minded and noble aim of enriching science and of diffusing in far-off lands the morality of the Gospel, and with it, the benefits of true civilization. Men, such as Dr. Livingstone, are, permit me the expression, veritable Providences, which Heaven, in its mercy grants us, to console us for the many useless or wicked persons who inhabit a part of the earth. Everybody knows that it is nearly four centuries and a half since some Portuguese navigators, as courageous, and as learned, undertook and accomplished some great discoveries. The names of Zamo, of Prestrillo, of Dias, of the great Vasco de Gama, and of many others, are well known; but everbody does not know, that, at the same time that these navigators were crossing the seas, surveying the coasts, and trying to make the tour of Africa in order to reach Asia, others were endeavouring to arrive at the same result, by crossing the interior of Africa. Before the year 1450, by the orders and instructions of the great and immortal Infante Don Henri of Portugal, the greatest and most learned prince of his time, Jean Fernandez penetrated into the interior of Africa, where, shortly after, he was joined by Anton Gonsalves. Some years after, several other Portuguese penetrated into the interior of Africa; some searching for Timbuctoo, and others in various other directions. History has preserved the names of several of these travellers, and it may be said that the Portuguese have never relinquished their endeavours to penetrate into the interior of Africa. Towards the end of the last century, the learned Dr. Lacerda, furnished with good instruments, proposed to traverse Southern Africa, from the eastern to the western shore; unfortunately, death surprised him in the midst of these learned travels, in the country of the King of Cazembe. Afterwards, other travellers undertook to cross Africa, and from 1806 to 1811, Pedro Jean Baptista and Amaro Jose, with the instructions of Colonel Francisco de Castro, went from the western to the eastern shore, and

returned to Loanda by the same road, after an absence of more than four years. The journal of their travels has been printed, but, unfortunately, they were not sufficiently well-informed to be able to determine astronomically the position of the different places they had crossed.* Gentlemen, I must conclude, and if I have cited these facts and these names, it is by no means for the purpose of diminishing the glory that belongs to Dr. Livingstone; but, on the contrary, to recognise that he has obtained results more complete than those who preceded him. The name of Dr. Livingstone is already inscribed in the history of the civilization of Southern Africa, and it will always occupy a very distinguished place there.

"Honour then to the learned Dr. Livingstone!

"Mr. President and gentlemen, I beg your pardon for having trespassed so long on your time and attention, and thank you for the kindness with which you have condescended to listen to me; but before sitting down, allow me to ask you to accept of my best wishes for the prosperity of the Royal Geographical Society, which has rendered so many and such great services to science, to commerce, and to civilization. Accept also my best wishes for the British Empire—may this land of order and of liberty—this country, where all the unfortunate find a safe and generous asylum, always preserve its power! I offer these wishes as the representative of the oldest, most constant, and most faithful ally of England; I offer them also as a private individual."

The SECRETARY then read extracts from the three last communications, addressed by Dr. Livingstone from Africa to Sir Roderick Murchison, which had been reserved for that occasion. They were full of minute and graphic details relating to the regions explored by the traveller, and were listened to with the utmost interest. (In the preceding chapter we have drawn largely upon these letters.)

The PRESIDENT said: We return thanks to Dr. Livingstone for having communicated these able documents to us, a very small portion of which has been read by Dr. Shaw. It is impossible, on an occasion like the present, fully to estimate the value of Dr. Livingstone's communications; but there are so many subjects, some of them of deep interest to persons here assembled, and others of vast importance to the world at large, that I hope Dr. Livingstone will explain to us, *viva voce*, some of those remarkable features in his travels, on which he would wish most to dwell. I particularly invite him to indicate to the meeting, those portions of the country, the produce of which is likely to

* In regard to this Dr. Livingstone said afterwards:—"After the first European had traversed the African continent the Portuguese Minister claimed the honour for two black men (trading persons of colour), and these blacks, in the memory of a lady now living at Tete, came thither dressed and armed as the people of Loanda, but proceeded no further. They thus failed by about 400 miles of what was claimed for them."

be rendered accessible to British commerce. I wish him to point out, on the diagram made for this occasion by Mr Arrowsmith, the lines of those ridges which he describes as perfect *sanatoria* or healthy districts, distinguished from the great humid or marshy region in the interior, and as being equally distinguished from the deltas on the coast, in which the settlements of Europeans have hitherto been made. It is important to observe that large tracts of this country are occupied by *coal-fields*, of which we have had the first knowledge from our distinguished traveller. There are indications throughout the flanking ranges, of great disturbance of the strata, by the intrusion of igneous rocks which have very much metamorphosed them. The strata upon the two sides of Africa, dip inwards, and the great interior region thus forms an elevated plateau arranged in basin-shape. This vast basin is occupied by calcareous tufa, the organic remains in which seem to indicate that at a period not remote in the history of the globe, this great marshy region has been desiccated, leaving in these broad plateaus of calcareous tufa, the remains of lacustrine and land animals, which are still living in the country. I hold in my hand a geological map of the Cape territory as prepared by Mr. Bain, which, coupled with the discovery of Lake Ngami, led me to offer to you that speculation on the probable physical condition of the interior of Africa which the observations of Dr. Livingstone have confirmed.

Dr. Livingstone then rose, and, pointing to the diagram of Africa, said: The country south 20° is comparatively arid; there are few rivers in it, and what water the natives get, is chiefly from wells. But north of 20°, we find a totally different country, wonderfully well watered, and very unlike what people imagine Central Africa to be. It is covered by a network of waters, which are faintly put down in the map, and chiefly from native information. The reason why we have trusted to native information in this case, is this: when Mr. Oswell and I went up to the Chobe in 1851, we employed the natives to draw a part of the Zambesi in the centre of the country, which had hitherto been unknown to Europeans. They drew it so well, that although I have since sailed up and down the river several times, and have taken observations all along, I have very little to add to that native map. The natives show on their maps that you can go up one river and get into another. You can go up the Kama, for instance, and get into another, the river of the Banyenko. You can go up the Simah and get into the Chobe, and can come down into the Zambesi, or Leeambye. You can go up the river Teoge, and round again by the Tzo to Lake Ngami. If you go up the Loi, you can get into the Kafue. And they declare that if you go up the Kafue in a canoe, you can get as far as the point where that river divides from the Loangua. All these rivers are deep and large, and never dry up as the South African rivers do. Some will say that the natives always tell you that one river comes out of another. Yes, if you do not understand the language you may

say so. I remember when Colonel Steele and I were together, the natives pointed him out as still *wild*, and said I was *tame*, because I understood the language. Now, I suppose, when a geographer tells you that, when the natives say, "one river runs into or out of another," they don't mean what they say; but, in reality, the natives mean that the geographer is still *wild*, he is not *tame*, *i. e.* he does not know the language. I found the natives to be very intelligent; and, in this well watered part, to be of the true Negro family. They all had woolly hair, and a good deal of it, and they are darker than those who live to the south. The most remarkable point I noticed among them, was the high estimation in which they hold the women. Many of the women become chiefs. If you ask a man to do something for you, he will perhaps make some arrangements about payment; but before deciding to do it, he is sure to say, "Well, I will go home and ask my wife." If the wife agrees to it, he will do what you want; but if she says no, there is no possibility of getting him to move. The women sit in the public council, and have a voice in the deliberations. Among the Bechuanas the men swear by their fathers, but among the true negroes they swear by their *mothers*. Any exclamation they make is, "Oh, my mother!"—while among the Bechuanas and the Kaffres they swear by their father. If a woman separate from her husband, the children all go with the mother—they all stick by the mother. If a young man falls in love with a young woman of another village, he must leave his own village and live with her; and he is obliged to keep his mother-in-law in firewood. If he goes into her presence, he must go in a decent way, clapping his hands in a supplicatory manner; and if he sits, he must not put out his feet towards her—he must bend his knees back, and sit in a half-bent position. I was so astonished at this, that I could scarcely believe their own statements as to the high estimation in which they held the ladies, until I asked the Portuguese, if they understood the same, as I did. They said, exactly the same; they had been accustomed to the natives for many years, and they say that the women are really held in very great estimation. I believe they deserve it; for the whole way through the centre of the country, we were most kindly treated by them. When I went up the Zambesi, I proceeded as far as the 14th degree, and then returned to Linyanti. I found the country abounding in all the larger game. I know all the country through which Mr. Gordon Cumming and others have hunted, and I never saw anything before like the numbers of game that are to be found along the Zambesi. There are elephants all the way to Tete, in prodigious numbers, and all the other large game, buffaloes, zebras, giraffes, and a great variety of antelopes. There are three new species of antelope that have never been brought to Europe.

Seeing the country was well supplied with game, I thought it was of little use burdening my men with other provisions; I thought I could easily

supply our wants with the gun, and I did not wish to tire them and make them desire to return before we had accomplished our journey; so we went with scarcely anything. All the way up the river we had abundance of food, and any one who is anything of a shot, may go out and kill as much in two or three hours, as will serve for three or four days. The animals do not know the gun, and they stand still, at bowshot distance. We got on very well in this way, until we came to Shinte. There we found that the people, having guns, had destroyed all the game in the district, and that there was nothing left but mice; you see the little boys and girls digging out the mice. I did not try to eat them, but we were there obliged to live entirely upon what the people gave us. We found the women remarkably kind to all of us; the same in going down the Zambesi. Whatever they gave, they always did it most gracefully, very often with an apology for its being so little. Then, when coming to the eastward, we found it just the same. They supplied us liberally with food wherever we went, all the way down, till we came near to the settlements of the Portuguese. In the centre of the country, we found the people generally remarkably civil and kind; but as we came near to the confines of civilization, then they did not improve. We had a good deal of difficulty with different tribes, as they tried to make us pay for leave to pass. It so happened that we had nothing to pay with. They wanted either an ox, a gun, or a man. I told them that my men had just as good a right to give me, as I had to give one of them, because we were in the same position—we were all *free men*. Then they wanted an ox, and we objected to it, saying, "These oxen are our legs, and we cannot travel without them; why should we pay for leave to tread upon the ground of God, our common Father?" They agreed it was not right to ask payment for that, but said it had always been the custom of the slave-traders, when they came in, to give a slave or an ox, and we ought to do the same. But I said, "We are not slave-dealers, we never buy nor sell slaves." "But you may as well give us an ox," they replied, "it will show your friendship; we will give you some of our food, if you give us some of yours." If we gave them an ox, they very often gave us back two or three pounds of our own food; this is the generous way they paid us back. But with the women we never found any difficulty.

Let me mention the punishment which women inflict upon their husbands in some parts. It is the custom of the country for each woman to have her own garden and her own house. The husband has no garden and no house, and his wives feed him. I have heard a man say, "Why, they will not feed me; they will give me nothing at all." A man may have five wives, and sometimes the wives combine and make a strike against him. When he comes home he goes to Mrs. *One*. She says, "I have nothing for you; you must go to Mrs. *Two*." He then goes to Mrs. *Two*, and she says, "You can go to the one you love best;" and in this way the husband is sent from one

to the other, until he gets quite enraged. In the evening I have seen the poor fellow get up in a tree, and in a voice loud enough to be heard by the whole village, cry out, "I thought I had married five wives, but I find I have married five witches; they will not let me have any food." The punishment a woman receives for striking her husband, I thought very odd, the first time I saw it in the town of Sechele. The chief's place is usually in the centre of the town. If a woman happens to forgot herself so far as to give her husband a blow, she is brought into the centre of the town, and is obliged to take him on her back and carry him home, amid the jeering and laughter of the people, some of the women crying out, "Give it to him again."

Slavery exists in the country, *i. e.*, domestic slavery; but the exportation of slaves is effectually repressed. I found in Angola, that slaves could scarcely be sold at all. I saw boys of 14 years of age, sold for the low sum of 12s. If they could send these to Brazil, they would fetch a very much higher price, perhaps 60 dollars. In passing along, we went in ompany with some native Portuguese, who were going into the interior, and who had eight slave women with them, and were taking them towards the centre of the country to sell them for ivory. It shows that the trade is turning back towards the interior. In passing through the country, I found that the English name had penetrated a long way in. The English are known as the tribe "*that likes the black man.*" The Portuguese, unfortunately, had been fighting with them near Tete; but the natives had been aided by half-breeds, and kept the Portuguese shut up at Tete, two whole years. In coming down the river, I knew nothing of this war. Once we saw great numbers of armed men going along the hills and collecting into a large force, and all the women and children sent out of the way. When we got to where they were, some of the great men came to ask what I was? "Are you a Mozungo?"—that is the name they apply to the Portuguese; I did not know it, however, at that time. "No," I said, "I am a Lekoa." "Then," they said, "they did not know the Lekoa." I showed them my arm. I could not show my face as anything particularly white, but I showed my arm, and said, "Have the Mozungo skin like that?" "No, no; we never saw such white skin." "Have they long hair like mine?"—the Portuguese make a practice of cutting the hair short. "No; you must then be one of the white tribe 'that loves the black man.'" "Yes, I am." I was then in the midst of the belligerents, without having any wish to engage in the quarrel. They finally allowed me to pass.

Once when we came to a tribe, one of my head men seemed to have become insane and ran away, and we lost three days seeking for him. This tribe demanded payment for leave to pass, and I gave them a piece of cloth. In order to intimidate us they got up the war dance, and we made them another offer, and gave another piece of cloth. But this was not satisfactory, and then they got up their war dance in full armour, with their guns and drums and

everything quite warlike, in the sight of our encampment. My men had been perfectly accustomed to fighting; they were quite veterans, but in appearance they were not near so fine as these well-fed Zambesians. They thought they were intimidating us, but my men were perfectly sure of beating them. One of my chief men seemed to be afraid, because they never make a war dance without intending to attack, and got up during the night and said, "There they are, there they are!" and ran off, and we never saw him again.

The country is full of lions, and the natives believe that the souls of their chiefs go into the lion, and consequently when they meet a lion they salute and honour it. In travelling, the natives never sleep on the ground; they always make little huts up in the trees. We had a good many difficulties of the nature I have described, with the different tribes on the confines of civilization. The people in the centre of the country seem totally different from the fringe of population near the coast. Those in the centre are very anxious to have trade. You may understand their anxiety in this respect when I inform you, that the chief of the Makololo furnished me with 27 men and 15 oxen, canoes, and provisions, in order to endeavour to form a path to the West Coast; and on another occasion the same man furnished 110 men, to try and make another path to the East Coast. We had found the country so full of forest, and abounding with so many rivers and so much marsh, that it was impossible to make a path to the west, and so we came back and endeavoured to find one to the east. In going that way, we never carried water a single day. Any one who has travelled in South Africa, knows the difficulty of procuring water, but we were never without water a single day. We slept near water, passed by water several times during the day, and slept near it again.

The western route being impracticable for waggons, we came back, and my companions returned to their friends and relatives. I did not require to communicate anything about our journey, or speak even a word about what we had seen; as my men got up in all the meetings which were held, and told the people of what had passed. One of the great stories they told was, "We have been to the end of the world. Our forefathers used to tell us that the world has no end, but we have been to the end of the world. We went marching along, thinking that what the ancients had told us was true, that the world had no end; but all at once the world said to us, 'I am finished; there is no more of me; there is only sea in front.' All my goods were gone when I got down into the Barotse valley, among the Makololo, and then they supplied me for three months; and in forming the eastern path, which I hope will be the permanent one into the interior of the country, the chief furnished me with twelve oxen for slaughter and abundance of other provisions, without promise or expectation of payment. At one time it was thought, instead of going down the way we came, we should go on the other

or south side of the river. But this river forms a line of defence against the Matabele, where my father-in-law, Dr. Moffat, went. I was persuaded by some to go in that direction. But when I had heard the opinions of all who knew the country, and those who had lived in that direction, I resolved to go north-east, and strike the Zambesi there.

In passing up towards Loanda, we saw that the face of the country was different, that it was covered with Cape heaths, rhododendrons, and Alpine roses, showing that we must be on elevated ground. Then we came to a sudden descent of 1,000 feet, in which the river Quango seemed to have formed a large valley. I hoped to receive an aneroid barometer from Colonel Steele, but he had gone to the Crimea. In going back, therefore, I began to try the boiling point of water, and I found a gradual elevation from the west coast until we got up to the point, where we saw the Cape heaths and rhododendrons; then, passing down inland, we saw the rivers running towards the centre of the country, and the boiling point of water showed a descent of the surface in that direction too. This elevated ridge is formed of clay slate. In going north-east, towards the Zambesi, we found many rivulets, running back towards the centre of the country. Having gone thither, we found the elevation the same as it was on the western ridge, and the other rivers, as described by the natives, flowing from the sides into the centre, showing that the centre country is a valley—not a valley compared to the sea, but a valley with respect to the lateral ridges. There were no large mountains in that valley; but the mountains outside the valley, although they appeared high, yet, actually, when tried by the boiling point of water, were not so high as the ridges, and not much higher than the valley.

The PRESIDENT: Will you describe the White Mountains?

DR. LIVINGSTONE: They lie to the north-east of the Great Falls. They are masses of white rock somewhat like quartz, and one of them is called "Tabacheu," which means "white mountain." From the description I got of its glistening whiteness, I imagined that it was *snow;* but when I observed the height of the hill, I saw that snow could not lie upon it.

The PRESIDENT: The society will observe that this fact has an important application.

DR. LIVINGSTONE: I observed to them, "What is that stuff upon the top of the hill?" They said it was stone, which was also affirmed to me while I was at Linyanti, and I have obtained pieces of it. Most of the hills have this coping of white quartz-looking rock. Outside the ridges the rocks are composed of mica and mica-slate, and crystalline gneiss at the bottom. Below we have the coalfield, which commences at Zumbo. Higher up there are very large fossil trees, of which I have brought specimens.

The PRESIDENT: The point to which I called your attention with reference to the white rocks, is important, as it may apply to the mountains

towards the eastern coast of Africa, which have been supposed to be covered with snow, and are commonly called the "Mountains of the Moon." It seems that the range of white-capped hills, which Dr. Livingstone examined, trended towards those so-called mountains, and it may prove that the missionaries, who believe that they saw snowy mountains under the equator, have been deceived by the glittering aspect of the rocks under a tropical sun. I would also ask Dr. Livingstone if he has formed any idea of that great interior lake, which is said to be 600 or 700 miles long; and whether the natives gave him any information respecting it?

DR. LIVINGSTONE: When I was on my way from Linyanti to Loanda, I met with an Arab, who was going to return home towards Zanzibar across the southern end of the lake "Tanganyika," and who informed me that in the country of the Banyassa (Wun' Yassa?) there is an elevated ridge which trends towards the N.N.E. The lake lies west of it, and in the northern part is called Kalague. They cross the southern end of it, and when crossing they punt the canoe the whole way, and go from one island to another, spending three days in crossing. It seems, from the description I got from him, to be a collection of shallow water, exactly like Lake Ngami, which is not deep either, as I have seen men punting their canoes over it. It seems to be the remnant of a large lake, which existed in this part, before the fissure was made to allow the Zambesi to flow out. That part of the country is described by many natives as being exceedingly marshy. The Makoloko went up to the Shuia Lake and found all the country exceedingly marshy, and a large lake seems to be actually in existence, or a large marsh with islands in it. But it can scarcely be so extensive as has been represented, as in that case I must have crossed part of it or heard more of it.

MR. F. GALTON, F.R.G.S.: I should be glad to ask Dr. Livingstone, whether, in his route across Africa, he fell in with any members of the Hottentot race. In old maps the northern limit of the Hottentot race is placed but a short distance beyond the Orange River; later information has greatly advanced their boundary, and in my own travels, I found what appeared to be an important headquarters of that people, at latitude 18° South. There they were firmly established in the land, and were on intimate terms with their negro neighbours, the Ovampo. These Hottentots asserted that their race was equally numerous still farther to the northward of the most distant point I was able to reach, and I have been unable as yet, to obtain any information by which any northern limit to the extension of the Hottentot race can, with certainty, be laid down.

DR. LIVINGSTONE: When I went up to discover Lake Ngami with Mr. Oswell, I found people who have the "click" in their language, and who seem to be Hottentots; they had formerly large quantities of cattle, and