Free Church of Scotland.

LIVINGSTONIA MISSION.

REPORT ON JOURNEY OF EXPLORATION, SEPTEMBER TO DECEMBER 1879.

From James Stewart, Esq., C.E., to Dr. George Smith, C.I.E., Foreign Secretary of the Free Church of Scotland.

LIVINGSTONIA, *December 31, 1879.*

MY DEAR SIR,—I have now the honour to forward to you my report of my journey of last three months along the shore of Lake Nyassa, and overland to Lake Tanganyika. I had a very prosperous and interesting journey. I found an excellent route between the two lakes; found the natives friendly and peaceable; and have seen many good positions where mission stations might be located. I returned to Livingstonia on December 20th, in good health, not having had a day's illness throughout the journey, and thankful to God for his protection and guidance through it all.—I am, yours sincerely,

JAMES STEWART.

"It will be remembered that in 1878 Dr. Laws and I minutely inspected the whole of the southern portion of the west side of Lake Nyassa, and a good deal of the country lying inland; our journey having extended to Kuta Bay, or Siska, in south latitude 11° 16′. We found two sites which have since been occupied as observing stations, and also as sub-stations for mission work. Not being fully satisfied with either of these places, and in hope of finding a better, as well as for the purpose of extending our knowledge of the country and its inhabitants, and in obedience to instructions received from the Committee, a journey in continuation of that of last year was undertaken. This report is therefore the sequel to that of Dr. Laws. The plan that I laid out for myself was to start from the sub-station at Kaningina, march to Karonga's village at the Kambwe Lagoon, and thence, time permitting, to cross to Pambete, on Lake Tanganyika. Owing to many circumstances, the start was delayed longer than was desirable; but on September 10th I left Livingstonia in the *Ilala*, with thirty natives, some of whom were to serve as guard, and the rest as ordinary carriers. Chimlolo, one of our most faithful men, acted in the same capacity as last year—as sergeant and caravan leader. On the 13th I reached Marenga, and there I found Mr. John Moir, who was to accompany me. On the 15th we landed at Nkata Bay, having brought on six of Mr. Moir's carriers and four new recruits. On the 17th we reached Kaningina, and found Mr. Miller and William Koyi well. The next day we made our final arrangements, and left Kaningina. The party consisted of Mr. Moir and myself, William Koyi, and Mapas Ntintili, who had come with me from Livingstonia for a short change for the benefit of his health, and forty-three natives.

"Our road led over the highest point of Mount Kaningina, about five thousand feet above sea-level, and was very steep and rough. We camped on its western side, and at mid-day on the 19th reached Chipatula's village, and were received by the chief in a friendly manner. I told him of the endeavours that Dr. Laws had made in the colony to obtain men who might be stationed among them, and of the interest that his account of them had created among the natives there; that men were not at present available, but that, ere long, we hoped to be able to send a teacher among them. He begged me to go on to Mombera, to give him the same account; and though I had not intended to do so, I consented. The next day, Saturday, we reached Mombera; but when I inquired for the chief, I was told he was 'not at home.' It was soon evident that he was either designedly absent, or that he simply denied himself. We saw only inferior head-men, who expressed dissatisfaction that we had not come to settle among them, and that they did not understand why we should visit other chiefs before doing so. I have no doubt that they were sincere in their desire to make friendship with us; but an exclusive alliance only would suit them. We heard that they were tired of waiting for us, and intended now to take their own way, which, I fear, means war before long. They have lost both power and prestige within the last two years, and may now be resolving to attempt to regain both. I heard later that there are two parties in their council. Mombera and Chipatula and their head-men are desirous of peace and to invite us still to come among them, while Ntwaro and Mperembe wish to keep us at a distance, and to recover their power by force of arms. It was in deference to the wishes of this party that Mombera would not see

us. I may mention now that two months afterwards Ntwaro broke the peace and attacked and burned two Atimbuka villages, killing the inhabitants. I fully expect that soon the Atonga and Atimbuka in alliance will drive the Amangone out of the country.

"Mombera's territory is in the Kasitu valley. It is a gently undulating country, flanked by hills on all sides, and cut up by several watercourses dry except in the rains. The Kasitu itself is the only perennial stream. The land, though poor, is cultivated to a considerable extent. Maize is chiefly grown. Trees are few and of stunted growth. On Monday, September 22nd, we left Mombera's and marched down the Kasitu valley, the road leading nearly due north. We passed no villages till we came to Mount Bwabwa, on the east slope of which is Ntwaro's village, and camped in the Mpopomo district. Mombera's head-man here received us civilly and gave us a calf, and we obtained twelve new carriers from him. Mapas now left us to return to Kaningina, as it was not intended that he should accompany us far. Four miles further north the Kasitu joins with the Linyangwa, which is much the larger stream; and four miles further we came on a large grove of palm-trees, at least three hundred in number. We afterwards passed many more. These palms bore large clusters of fruit, as large as a child's head, containing yellow stringy pulp and three large seeds. The pulp is eaten sometimes, but otherwise the tree is of little value. On the 23rd, 24th, and 25th we passed through a deserted country, which, however, in places bore remains of old villages and gardens, with patches of cotton, castor oil, and mustard, but as a rule the soil is poor. The district is named Henga, and at present is a no man's land. On the evening of the 25th we reached the junction of the Kasitu with the Rikuru, which last is the larger stream, and comes from the west through a wild and mountainous country. The people here and in the valley whence the Rikuru comes are Atimbuka. The principal chief, whom I did not see, is named Mwendera, and lives to the west. The chief in the district we passed through is named Kanyole. We saw him though we did not halt long at his village. He met us in a friendly manner, and we obtained abundant supplies of food, which is the best evidence of good will which these people can give. They are much oppressed by the Amangone, and hold them in dread. The valley of the Rikuru north of its junction with the Kasitu is named Ntanta, and is the most fertile valley I have yet seen. It is some six or eight miles wide; the middle portion near the river is a swamp in the rains, and is covered by long grass, the abode of elephants, buffalo, and zebra. The western side is extensively cultivated, producing abundantly all that the natives require. It is watered by many streams of clear cold water, some of which are used for irrigation. The elevation of the valley is about 3700 feet above sea-level. The climate is cool and pleasant, and I have no doubt healthy, notwithstanding the marsh in the middle. The natives say it is healthy. Here I noticed an important change in the geological formation. The granite and quartz gave place to soft shale and clay schists. Taking into consideration the lie of the country, and the straight range of hills from Bunganya to Goneranjoka, and the position of the Kasitu, it is probable that the river forms the geological boundary, and that it runs in the trough of some great fault or nonconformity in the formation. The shale is very dry, and crumbles in the hand into small angular fragments. The schist is soft and micaceous. Ten miles further north I came on regularly stratified beds of hard, dark-gray sandstone; dip, 1 in $2\frac{1}{2}$ west and by north. The beds are two or three feet thick, but under heavy blows can be broken into thin laminæ of one quarter of an inch.

"The Rikuru valley, which I thought would have brought us gradually down to the lake level, is at its north end blocked by hills forming the lake coast, and the river flows through winding precipitous valleys, falling 2000 feet in the last fifteen miles of its course. The water which enters the gorge clear and sparkling leaves it heavily laden with bluish clay silt, by which its course in the clear waters of the lake is distinctly traceable for some distance. The Rikuru valley, as I have said, is the most fertile I have seen. Before the Angone invasion cattle were plentiful, though now there are none. It used to be thickly populated, and would be so again if peace and quiet were thoroughly established. It will make an excellent site for a station; but owing to the difficulty of access which I have now to mention, I cannot recommend it for a head-station. The descent to the lake is a most trying one. In two places the road is almost precipitous. In one place is a rapid fall of more than 1000 feet, and in the last three miles at the coast the descent is 2300 feet. At present I would not say that it is possible to make a practicable road. We know of no harbour convenient for this place. On Saturday, September 27th, we came down to the lake shore, to the mouth of the Rikuru, in south latitude 10° 45′ 15″. The river loses much of its water by percolation before it enters the lake. Inside the bar it is in places more than five feet deep, but on the bar not more than two feet. On the 29th we marched northwards along the coast, reaching, after three miles, the stream in which is the coal discovered by Mr. Rhodes. The coal lies in a clay bank tilted up at an angle of 45° dip west. It is laid bare over only some thirty feet, and is about seven feet thick. It hardly looks as if it were in its original bed. The coal is broken and thrown about as if it had been brought down by a landslip, and traces of clay are found in the interstices. Yet the bed is compact and full of good coal. I traced it along the hill side for some two hundred yards, and found it cropping out on the surface here and there.

It is 500 feet above the lake-level, and about a mile and a half from the shore. I lit a good fire, which burned up strongly. The coal softened and threw out gas bubbles, but gave no gas jets. It caked slightly, but not so as to impede its burning. It is found in the main gorge of the Chisindiré valley. Three miles further on we crossed the Rumpé River, a large stream thirty yards across, and knee-deep in the dry weather.

"On the 30th we halted a day, as an elephant had been shot, but chiefly because I wished to climb Mount Waller. This hill is a remarkable one. The lower 900 feet is composed of sandy schists and hard and soft shales. From 900 to 1200 feet there are three bands or horizontal ribs running along the whole length of the mountain. These are of coarse, gritty sandstone, of mixed round and sharp grains, up to the size of a bean. Much of it is very soft. Over the ribs is a plateau of three or four hundred yards wide, and in the middle is the precipitous hill. Up to 2300 feet are shales soft and crumbly, then rises the cliff up to 3100 feet above the lake, or 4700 feet above sea-level. The cliff is composed of clay-slate of a dull straw colour, compact and hard, resembling Turkey whetstone, but devoid of cleavage. Beds are horizontal, ten or more feet thick, with intervening beds of crumbly shale, which, decomposing, let the hard cliff break off and fall.

"*October 1.*—We marched round Mount Waller, and struck inland at nine miles, and crossed a ridge running east and west, 800 feet high, and then descended into a marsh, which extended from the hills to the lake shore, and several miles to the north. The road kept well to the west, and for four days we did not touch the lake shore. The district is sparsely populated. A few spots here and there have been selected and occupied by a few people, who grow bananas chiefly. Several streams run down to the marsh, and possibly do not reach the lake in the dry weather. On the south side of this marsh the people are Atimbuka, and on the north are Chungus. As may be seen on the map, the lake trends due north from Mankambira's Point to near Deep Bay, in lat. 10° 27′, and thence turns fully 30° to the west, to as far as Kambwe Lagoon, in lat. 9° 55′, running parallel to the range of mountains which, from Mount Waller, stretches to the north-west. Fourteen miles south of the Kambwe Lagoon is another large lagoon nearly two miles in length, but the entrance is quite blocked up by reeds. Our carriers waded across the outlet up to the armpits. All the country, from Mount Waller to the Kambwe Lagoon, is very poor indeed; swamp and hard clay plain, broken here and there by dry gravel ridges, and occupied chiefly by large game.

"At Karonga's we found some of Mr. Rhodes's men, with letters from Mr. Thomson, of the Royal Geographical Society's expedition. We heard of Mr. Johnston's death, and that Mr. Thomson had been at the Rombashe River, and had left for Tanganyika on September 28th or 29th.

"I spent some time in inspecting the Kambwe Lagoon. I am sorry to say it is not a good harbour. It is perfectly safe when the steamer is once in it, but it was with difficulty that I found a six foot channel over the bar, and inside the depth is not much greater. The river Rukuru, which until last year flowed through it, has changed its course, and now enters the lake a short distance south. Its former channel is quite silted up, and is now actually higher than the general level of the ground, so that there is no hope of its ever returning to the lagoon. It may seem strange that the river-bed should be higher than its banks. I account for it thus. In the rains the whole country is flooded for some miles, so that the river flows in its course, marked out by thick reeds, and has for its banks the standing water of its overspill. The heavy sand is rolled down this channel, and deposited over its whole length, till it is raised to such a height that the current is forced to leave it. On inquiry, I found that in Karonga's boyhood, say sixty years ago, the river flowed to a point some three miles to the south. That point is now being rapidly worn away, and the debris scattered along the coast. In short, my opinion is, that the conditions of the coast-line are at present unstable, and that the Kambwe Lagoon may be silted up and lost as a harbour very soon.

"I had arranged with Dr. Laws that the *Ilala* should meet us here with fresh carriers and stores, so we waited a few days for her. On the 11th she arrived with Dr. Laws. After making all necessary arrangements, and promising to be back on December 1, Mr. J. Moir, William Koyi, and I started on our journey to Pambete on October 14. Our first day's march of eleven miles led us due west to the foot of the hills, across a dry plain, much of which, however, is under water in the rainy season. Near the coast it is fairly populous, but inland not so. We camped by the Rukuru River, at the village of Karamba. Next day we kept up the valley of the Rukuru, marching north three or four miles, and passed a few Chungu villages, which, I may state, are kept remarkably neat and clean; a space around is carefully swept, and the banana groves add their refreshing shade to make them picturesque and inviting. We then left all villages behind, and struck into the hills, marching west. Two nights we camped in the bush; and on the fourth day after leaving the lake, we reached the village of Maliwandu, a Chungu. Elevation, 3900 feet above sea-level. The road for two days was certainly rugged and steep, but much less so than one would have expected. Having now traversed several of the passes from the lake to the highlands, I can say that this is the easiest of them all, and in prospect of a road being made here, that such a work is quite practicable, though of course presenting difficulties here and there. At Maliwandu we were quite across the hills, and had a view over a level plateau as far as the eye could reach to the south and west. To the north-west, in the direction we

wished to take, were some hills. Maliwandu received us frankly and kindly. We exchanged presents with him, and he promised us guides. Here, unfortunately, Mr. Moir and I were constrained to part company. He had suffered a good deal from blistered and swollen feet, and one sore was, we thought, a deep-seated abscess, which it turned out to be. We halted three days, and then agreed that it was better that I should push on alone, and that Mr. Moir, when able to walk, should return to Nyassa. It was fortunate we came to this conclusion so soon, as Mr. Moir was confined to his tent for ten days more. Leaving with him a few men to carry his baggage and stores, I proceeded on October 21. I marched west for 13 miles, and then entered a valley stretching north, and camped at 18½ miles at a stockaded village called Mpoka. The villagers were very suspicious at first, and shut the gate of the stockade, but ere long they came out to see us. Next day we reached Chiwinda's village, a few miles south of Mount Lireche, the most prominent hill in the district. Chiwinda is a well-known chief. William Koyi had heard of him as far off as Kombombo's. He received us politely, but I had not much talk with him. He possesses cattle and sheep and goats in considerable numbers. The soil here in parts is very good, but most of it is poor. The natives cut down branches of trees and collect them in a large heap, perhaps two feet high and extending over half an acre. This they burn, and then hoe the ashes into the soil for their gardens. The trees are thus all pollarded, as mentioned by Livingstone. The lower three or four feet of the trees are blackened stumps, while the upper branches are fresh and green. Chiwinda's village is on the Songwe River, which I followed for two days more. It flows to Nyassa. Upwards the valley trends north-west, flanked on the west by a straight range of hills called the Awiwa Hills. In the south, near Chiwinda, they are high and well defined; in the north the range slopes down and merges into a high plateau, which I had to cross. On the east side of the valley the hills are irregular and, excepting Mount Lireche, are of small size.

"On October 23rd I passed villages of Chikanda and Chitete, and camped at Viumba.

"*October 24.*—Passed Kaponde, Mwembe, and Mombera. All these villages are stockaded, and possess cattle. The Chungu tribe extends to this point. The next day I visited Anyamanga villages. I found the Chungus everywhere well disposed. In the hills they clothe themselves decently, and cloth is pretty abundant among them. They sold us provisions in sufficient quantity.

"*October 25.*—Struck due west, and at five miles ascended to a higher plateau, the edge of which is a continuation of the Awiwa range. Passed villages of Mpemba (Chungu), and Kabangalala, and Mpasa (Anyamanga), and camped at Miluma.

"*Monday, October 27.*—Passed village of Chikanamlira, the principal Anyamanga chief. He would not come out to see me, so I passed on. At this village I came on the track of Mr. Thomson, and hence followed him to Tanganyika, overtaking him rapidly. At Miluma I heard that the emissaries of Mapunda, Kasang, and Mpanga, chiefs near Livingstonia, had been among the Babemba to the south, and had prompted them to make a foray against the Anyamanga. Miluma's village and four others were broken into, and women and children enslaved. These Babemba are the disturbers of the peace in this district. They occupy the country three or four days' march to the south of Chikanamlira's. Mtuka, otherwise Chitimkuru, is their principal chief just now. Two years ago he got a decided repulse at Chikanamlira and also at Mambwe, but he is still the terror of the country.

"*October 28.*—Passed Finga, Rukanga, and Manga, and camped by stream Mera, which flows southwards to the Chosi, and then joins the Chambesi River. This stream is the boundary between the Anyamanga and the people of Mambwe.

"*October 29.*—Passed village of Chivuta, and camped at Chirundumusia.

"*October 30.*—Reached the head-village of Mambwe. In the evening the chief came to see me. I put him down at first as a Swahili, but afterwards found that he was a native of the district. He is a young man of about twenty years, intelligent and quick, very inquisitive, and a great beggar. He was dressed in Arab fashion from head to foot in clean, fine cloth, and though young has quite the bearing of a chief. I gave him a good present, but he did not feel inclined to show his friendship by giving one in return, though he was in our hearing prompted to do so by some women. He is very nervous, and felt by no means at his ease when at his request I showed him my guns. Opening the breech or a click of the locks was a signal for a start, and he nearly ran off when he saw a rifle loaded in a second or two. His own name is Nsokolo, but he is usually called Mwini Mambwe, or Chief Mambwe. His father, lately dead, was the first of his dynasty. He had long been in league with the Amangone, while they dwelt among the Fipa Mountains, by whose aid he was able to keep the Babemba in check. I here got some further notes of the history of the Angone tribe. A few years ago (the exact time I could not arrive at), they dwelt at Fipa, which is described as being a beautiful and fertile country. Then the tribe or tribes, which are now broken up and separate, lived together. Pisani seems to have been the most powerful chief. Under him were Chipatula (the old man, not the present), Mombera and his brothers, Mperembe Chiwere, Tabeni, and the Gangwara tribe. Mperembe quarrelled with Tabeni, but was beaten by the latter, who then with his retainers went north along the west side of Lake Tanganyika, where he is now peaceably settled. Pisani and his followers then attacked the Babemba, and for a time were victorious, but

ultimately were driven back. They all then went to the present Gangwara country, when the Gangwaras detached themselves and drove the others back. Then Pisani went south to the Rikuru valley, and ultimately to the Kasitu valley. Mperembe and Pisani then quarrelled. Pisani and Chiwere went further south and settled ; Pisani to the west, and Chiwere to the south-west of Kotakota, where they still are. Mperembe made a second raid against the Babemba, and was assisted by Mambwe. He was soon driven back, and is again settled in the Kasitu valley near Mombera. It is said that this assistance given by Mambwe is the ground of the present enmity of the Babemba. The people of Mambwe say that they would welcome Mperembe among them again, as he treated them better than the Babemba now do.

"*October 31.*—Passed villages Malamba and Nkwaza, and made a toilsome detour, having been taken out of our way by Mambwe's guide, who was dismissed without pay.

"*November 1.*—Passed village of Mantanyanta. A Swahili was a visitor here, but I learnt nothing of his movements. Food at prohibitive prices. Crossed the Saisa river, which seemed to rise out of a large marsh above where I crossed. It is about fifteen feet wide and waist deep. It flows eastwards to Lake Hikwa, into which it falls in several bounds over a high cliff. The water of Hikwa is said to be brackish but not undrinkable, and is used by the natives. The lake is of no great extent or depth. In one place there is a ford across it. In the afternoon we were overtaken by a heavy thunderstorm, and hurriedly took shelter in a small and dirty village, from which, on the next day, Sunday, we removed to a near village called Fambo, two miles further on, to a better camp, but found food very dear. I was told that this chief, Fambo, had ivory; but that no one else in the district had any.

"On November 3rd, after rising for two miles, we began the descent to Lake Tanganyika. The district I passed through between October 21st and November 3rd, may be described in a few words. Four marches led through the open valley of the Songwe, and then the road passed on to a high level plateau, across which I saw to the hills over Lake Tanganyika. Mambwe's country, and especially Chirundumusia's village, occupies the highest part of it, and from many points a most extensive view is obtained. In many places the soil is very good, especially on the Tanganyika side. I have no doubt that many European crops would grow. The average elevation is about 4700 feet above sea-level. The rainfall, I was told, is large, and, as I found, began a month earlier than on Lake Nyassa. Many good sites for mission stations could be found. The climate is cool and bracing, and I have no doubt healthy. Cattle I found at almost every village, and sheep and goats are kept in large numbers. The route through it that I followed is a remarkably easy one. It gradually rose from 3900 feet at Maliwandu's to 5400 feet at the ridge overlooking Tanganyika, and throughout the whole of it there is not one difficult ascent. Undulations of course there are, but they will be no obstacle to the construction of a road. Water is plentiful even in the dry weather. Good timber is, however, scarce, and this is the greatest drawback to the country. I may here say that I have quite failed to see the fine forests described by some travellers. Excepting, perhaps, the black wood and rose-wood of the Lower Shiré, I have seen no tree that would be reckoned of value for building purposes in any civilized society.

"The descent to Lake Tanganyika occupied two days only. The first day we passed villages of Masumba, Mpembe, and Chikomangombe, and camped at Zombe. Descent was gradual and generally smooth. Walking was quite easy. I did not see Zombe ; he was absent from his village, but I left him a present. I noticed here three human skulls, stuck as trophies on the stockade over the principal entrance.

"On the 1st, 2nd, and 3rd we had heavy rain in the afternoons.

"*November 4.*—After a descent, generally easy, of 2100 feet in fourteen miles, we at last reached the shore of Lake Tanganyika, after a march of two hundred and forty-three miles in seventeen days from Lake Nyassa. My first view of the lake was by no means an attractive one. It will be remembered that Mr. Stanley, in his last visit to Ujiji, found that since his previous visit the waters had risen considerably. There is evidence of this at the southern end of the lake also. The lake shore for miles is fringed by a belt of dead trees; many of them are still standing, and are swayed to and fro by the wind and waves, while others, fallen and water-logged, are beat and broken by the restless sea. The decaying vegetable matter pollutes the water, which is dirty and insipid. The account of the rise of the lake is as follows:—Four years after Dr. Livingstone's visit in 1869, the waters rose in one rainy season to a point where my camp was pitched in Pambete, or about 9 feet above the level of November 6, 1879. In the dry season it fell, but not to its original level; and every rainy season since it has risen to a point some 2 feet 6 inches lower than the maximum, or 6 feet 6 inches above the level when I saw it, according to evident marks on the trees. Large trees, still erect though dead, are standing in three or four feet of water two or three hundred yards from the shore, on what must quite recently have been dry land. The waters have thus gained at least ten feet on the land within the last few years, not reckoning the first high flood. As the trees most inland are nearly as much decayed as those in the water, I am inclined to think that the destruction of them all occurred about the same time, and that there is no evidence of a continued and gradual rise.

"I first touched the lake shore at the southern end of the most easterly bay. The next day I

crossed Molitonga Cape, River Lonzua, and Cape Chikala, and reached Pambete. The total distance from the Kambwe Lagoon on Lake Nyassa was 254 miles, instead of 177, as was supposed. At Pambete I had the pleasure of meeting Mr. Thomson of the Royal Geographical Society's expedition. He had arrived only the day before, and was much surprised to find a fellow-countryman walk in upon him. He had not heard of my approach until I was in the village, though I had heard from the natives, days before, that he knew of my coming and was expecting me. He was in pretty fair health, though suffering occasionally from fever. He had made satisfactory progress, and seemed to be well served by his men, none of whom had deserted him, which says much for his tact and for their spirit. He intended to leave some of his men at Karambo, march north to see the supposed exit from the lake at river Lukuga, and returning through Pambete, to make for Kilwa. I told him I had heard that he had had a collision with the Gangwaras, and was glad to hear him explicitly deny it. On the contrary, his relations with all the tribes were very friendly. I assisted him to set up the mercurial barometer supplied by the Royal Geographical Society, and took the readings.

"Pambete is a hot, close, damp, unhealthy place. The stream Leezy, which flows near, forms a noxious swamp, bearing profuse vegetation of trees and undergrowth. The hills, not two miles to south and west, rise fully 2000 feet, and present a bold cliff towards the lake, over which the stream Leezy falls in a beautiful cascade. The valley is shut in, and fresh breezes shut out. The place is most unsuitable for a mission station. The valley of the Lonzua might be occupied by Europeans; much of it is fertile, and the waters of the river could be used for irrigation. The tsetse fly, however, is found in great numbers along the shore of the lake. There are better valleys among the hills higher up. At or near Tambo a good site could be got, or in the Mwembezi valley, where Kakungu dwells, the chief of the Akandi, as the people of Urungu are called. Pambete, Mambete, or Mombete, used to be the most important place in the district, but lately the Babemba raids have forced the people to live among the hills. I found there the oil palm growing, and obtained two or three hundred seeds, which I have brought to Livingstonia. I was able to secure fifteen sets of lunars, which, however, I have not yet worked out. I remained at Pambete four days only. Food was neither abundant nor good, and as I had found the march so much longer than I expected, I was anxious to get back. I inquired from Mr. Thomson about his journey from Nyassa, and found that he had followed a longer and much more difficult route. He crossed a mountain 8000 feet high, besides travelling for many days in a very rugged country. He told me that Merere, whom I wished to visit if possible, had removed to Marema, which town is several marches north of the direct route between the lakes, lying at about 8° 15′ south latitude. When I left Tanganyika I was quite undecided which route to return by, but very soon sickness appeared among my men, and that decided me not to delay. The *Ilala* would be waiting for me, the rains had already set in, and serious illness was among my men. I determined to take the easiest way home. Mr. Thomson and I struck our camps on the same morning, November 10th. He proceeded westwards, deeper into the interior, and I to return to Livingstonia.

"We had no sooner reached the highlands than cold and wet had their effect on my men. Fever, dysentery, pneumonia, and jaundice,—each had several subjects; and my camp was quite a hospital for some days. I stopped near the Saisa River for three days. Food was rather scarce, but William Koyi fortunately shot several pallah and elands. Starting again, we made a short march of four miles. One of the men who was ill lay down halfway and refused to come on, though he was quite able to walk. William Koyi went back for him and brought him on in a pelting hail-storm. The poor man walked in smartly, but I fear this was his death. The next two days he was carried in my hammock; and on the last day, while his bearers were halting for a few minutes, he asked for water, which was handed to him, but, without drinking and without another word, he quietly sank back and expired. I halted the bearers on the spot, and at evening we buried him there, on a ridge near Mambwe. He was an Ajawa, whom I had brought from near Blantyre.

"While at Mambwe, on my return, I had a long talk with the chief. I asked him if he would like the English to settle in his country, and if he would receive them as friends. He said that was just what he wanted, and, now it had come of itself, that he would welcome them, and that they and he would have the country between them. I said we would frequently be passing to and fro between the lakes. He replied that his eyes would always be turned in the direction we had last gone. I was not quite sure of his sincerity, but some of his men seemed to be well pleased. To all appearance they are a peaceable and industrious people. As they told me, they desire only to cultivate their gardens and to work their iron. All the way between the basins of the two lakes I found traces of ironstone, and in places old workings. On one hillside in Mambwe I counted eight smelting kilns in good order, within a few hundred yards of each other, and doubtless there were many more. These kilns are larger than those at Blantyre. They stand about nine feet high, are five feet in diameter at the base and three feet at the top, and are built of clay plaster four or six inches thick. They will contain nearly half a ton of iron ore. Charcoal is used for smelting. The description of ore is the brown hæmatite; it is very hard and compact, and is found in solid beds of four or five feet thick. In one or two places I was able to shorten my march

a little by cutting off detours, but the general line of the march was the same as I had come by. I was glad to find the natives, and especially the Chungus, more friendly even than when I passed out. We were more than once received into their villages, and were on the best of terms. Near Maliwandu's the trees were thickly covered with large caterpillars, three or four inches long, and as thick as the forefinger. The natives were gathering them in great numbers. They disembowel and roast them, and preserve them for food. One kind is of a light pea-green colour, the other dark, with white spots and sharp spines on the back. We had frequent rain, and many of my men were ill. On inquiring what had become of a few coats that I had issued to the guard at the beginning of the journey, I found that they had disposed of them at Pambete for a few worthless handkerchiefs, and now in their need they were quite exposed to the weather.

"On December 3rd, two days after the time I had appointed, I reached Karonga's. The homeward march was two hundred and thirty-two miles, or twenty-two miles less than the outward march. I believe that a few miles more might be cut off by a carefully-selected road, but two hundred and ten miles is, I think, the shortest distance that can be reckoned on between the two lakes. I have no hesitation in recommending that this line be accepted as the route between Lakes Nyassa and Tanganyika, more especially as I heard from Mr. Thomson that the approach to Nyassa from the north-east, by which the Kilwa road would necessarily come, is a very bad one; and perhaps that road, if ever made, will have to avoid the lake. I visited four different tribes on this route:—The Chungus, at the coast and inland up to the head of the Songwe valley. Karonga is the acknowledged chief on the lake; but inland every village has its own chief, and is quite independent. This is their weakness, and leaves them open to attack from without. The country is good, and cattle are numerous. Iron is abundant, and a good deal worked. The next tribe I visited was the Anyamanga. Their country extends to the stream Mera. The chief is Chikanamlira, whom I did not see. To the west of them is Mambwe, under a young and intelligent chief, who may perhaps prove a good friend. His people are industrious iron-workers. In the hills round Lake Tanganyika are the Akandi. These tribes all speak different dialects, which were better understood by the Awisa men than by any others in the caravan. These people are all harassed by the Babemba, and would doubtless welcome among them any one who could bring them peace. To the north, near the Fipa Mountains, the people are Basukuma; the river Saisa separating them from the Anyamanga. At Lake Hikwa the people are Abanda and Apimbwe. The Chosi river is the boundary between Mambwe and the Babemba.

"By next mail I hope to be able to forward my map and section of the route I travelled, with a few additional geographical details. I was taken aboard the *Ilala* on December 9th, and reached Bandawe in three days. Thence I made a short expedition of five days to visit a valley discovered by Mr. Simpson, but of which I formed a very much lower opinion than he did. We—that is, Mr. J. Moir and I, William Koyi and Mapas—reached Livingstonia on December 20th, and were warmly received by all at the station.

"We would desire to acknowledge the goodness of God to us throughout this journey, and to return him thanks and praise for all his loving care of us.

"JAMES STEWART.

"LIVINGSTONIA, *Dec. 31, 1879.*"

MAMBERA'S TO THE BASENGA COUNTRY—NOTES BY MR. JOHN W. MOIR.

(*Of Livingstonia Central Africa Company.*)

The road to and the country of Mambera have already been well described by Mr. Stewart, C.E., and I now append some notes of an expedition thence to the north-west portion of the great Loangwa basin—that is, the Loangwa that flows into the Zambesi at Zumbo, above the Kebrabasa rapids.

The *Ilala* landed me at Nkata Bay on the 1st July of this year. I spent three days at Kaningina, whence William Koyi accompanied me to act as interpreter. After two days' stay at Mambera's, with whom I was on the friendliest of terms, crossing the Kasitu (or Kasēētoo), we marched a little north of True West for about eight or ten miles, through a tract acknowledging Mambera as chief. The people smelt iron, though I only found this out on seeing a mass of slag, when I had already passed the places where iron is now worked. Holding on the same course, we passed through an unpeopled, undulating forest of about sixteen miles in breadth, and scantily supplied with water. No game was seen, but tsetse was very abundant in several swampy valleys. We then crossed the Rukuru river, here a strong stream of about thirty yards, and nearly knee deep. Twenty miles further west and north-west brought us over a low, sandy water-shed into the Loangwa basin, where soil is very poor, and water was already scarce, though only about three months had passed since the end of the rains. The people are Basenga.

I had several lengthy conferences with Tembwe, the first chief I visited. He is a man of perhaps thirty, who saw Livingstone in the Tumbuka country, further south, probably in 1863. He was very anxious to get medicine for his enemies, particularly desiring my Bible; then he asked for a gun. Afterwards I found that he had robbed some Arabs, and was living in dread of an attack in retaliation. He was attacked two or three months ago, but was able to keep his assailants out of his strong stockade. On my showing him that to get our power he must get our knowledge, he gave me

a boy to be brought to Livingstonia to be educated. He is making fair progress with his lessons here. Tembwe has a large village, and there are generally a few Arabs about his place. I saw a calf belonging to one of these latter, which I was told had been carefully brought through the tsetse country. It, however, looked miserably ill.

Twelve or fourteen miles north-north-east brought us to the village of Kambombo, the greatest chief of the Basenga. It is strongly stockaded, and lies in the bend of a very small streamlet that flows at the bottom of a deep, broad course, doubtless well filled in the rains by the neighbouring Palaosenga Hills. All round here water was very seldom to be had, except by digging in some of the water-courses. The soil, however, seems fertile. I could get very little information about the surrounding country, one answer being given by all alike—They did not know, because since they were children they lived in terror of the Mangoni, and dared not leave their villages. In the neighbourhood of Kambombo's, however, I saw several new villages being built, in the hope, they said, that the English would be able to keep their dreaded enemies as quiet as they had lately become. An Arab caravan had built a misasa village, and intended to remain there over the rainy season. They had come from Zanzibar *viâ* Ujiji. They say they do not trade in slaves now.

Kambombo is himself a most interesting old chief, with a great deal of quiet dignity about him. He invited me often to come and talk with him, as he is unable to walk far. He seemed interested in all I told him and showed him. He has four or five sons, young men, and chiefs of his minor villages, one or two of whom were almost constantly with me. He followed Tembwe's example, and sent a boy with me, telling me to take care he did not run away. I explained again to him that I did not want a slave, as the Arabs doubtless did, but that if I took the boy it would be to teach him the message God had sent us, and then to send him back to his village to teach it to others. The boy did run home from our first camp, when I sent a message telling the chief, and reaffirming what I had said before. Returning to Mambera's, we passed through an uninhabited tract of twenty-five miles, chiefly covered with rather scrubby forest.

If a mission station were established among the Mangoni it would be easy to visit these Basenga occasionally. They would be very glad of this, and would probably send children to the school.

The people at the north end of Lake Nyassa, I was unable to get the name of their tribe or tribes satisfactorily. They seemed to call themselves after their ruling chief, when any reply was given to the questioning of my boys, but most replied that they did not know. The chief north of the lake is called Mangkenja; north-west of the lake, and to the Mbashi river, Malisaka; south of him, and extending to the Kurvira river, is Massewa; beyond him lies the country of Mwadyusa; and inland, that of Masangura. All but the second are full brothers, sons of Riputa, and they are on no very friendly terms with Malisaka, and the butchering of solitary men and the capture of women seem to be perpetrated on the slightest excuse. South of the two last mentioned lies Churapura, close to the hills; and still further south, Karonga, at the Kambwe lagoon.

Although often enough fighting among themselves, they are not to be feared by Europeans. They have spears only—neither guns, shields, nor bows. Besides, they were *most friendly* to me. Mwadyusa especially was most interested on hearing about the Bible, asking if there was in our country a road by which we could reach God's country; and, when told more about it, sending two boys to learn of these things and come back again. They remained with me happy enough till I took them on board the steamer, when one of them, a clever little lad of eight or ten, cried very much. When the steamer was lying in the Kambwe lagoon he got into the dingey early one Sunday morning and made to shore, leaving the steamer a day without communication with the shore. No restraint was kept on the other boy, who also went off; but I have no doubt that when the steamer is north again several boys will come to Livingstonia. Malisaka said he wanted to send two or three boys, but they were not at hand when the steamer had to leave.

They live on the plains, which are very swampy in the rains; they cultivate but little, living mainly on plantains and milk. They have considerable quantities of cattle. Together they make a large population.

JOHN W. MOIR.

LIVINGSTONIA, *December 29, 1879.*

LAKES NYASSA AND TANGANYIKA.

From Mr. James Stewart, C.E., to Dr. George Smith.

LIVINGSTONIA, *February 18, 1880.*

MY DEAR SIR,—In continuation of my report, which I forwarded to you in December, I wish now to add a few general remarks, as well as some minor details, which in my hurry I omitted. I have now traversed the whole of the west coast of the lake, and know its character. A concise description of it may be valuable. From the south end of the western bight to Mpemba the coast is fringed with reeds, and swamp extends some distance inland. Landing can be effected at very few points. Between the swamp and the hills (distant from the lake some ten miles) there is a good deal of very rich and fertile soil. It is inhabited in some places, and, in the opinion of the natives, is a most desirable country. For white men, however, I should say the climate would be deadly. It is hot, damp, and close, and for this reason must be rejected as a site for a station. Inland is the Ngone tribe, under Chikuse, with whom we would gladly station a teacher if one were available. Between Mpemba and Kota-kota the country is dry and sterile, and totally uninhabited. At Kota-kota the soil is little if any better. The population is attracted to the place only by the trade, which comes to a focus there, drawn by the safe and spacious harbour. They draw a miserable subsistence from the soil, cassava being the staple food. Kota-kota is at present the principal approach to the interior. It is in the hands of the Arabs, and is admirably adapted to their trade; and, therefore, as yet, is the most important place on the lake. I will show, however, that a rival harbour and route can be opened up, which will suit the purposes of an English company quite as well. Between Kota-kota and Mount Kowirwi the country is poor and valueless, though here and there it is sparsely inhabited. Between Kowirwi and Mankambira's Point a very large population is gathered under many petty chiefs, but all belonging to the same, the Atonga tribe. Centrically situated in this stretch is Bandawi, where our present sub-station is located. The soil is fair, and, in short, is the best on the west coast. We have already had a year's experience of the climate, which, at least, is decidedly better than that at Cape Maclear. The district naturally includes the whole of the area between Mount Kowirwi and Mankambira's, taking in the Matete Valley, the whole coast line, which is studded with villages, and the Limpasa Valley, which is now being repeopled. It is the only populous district on the lake shore. Between Mankambira's Point and Deep Bay there is a rock-bound coast, with one good harbour and one or two inferior ones. A good many small fishing-villages lie in the numerous bays, whose inhabitants laboriously cultivate a few patches of cassava on the steep hills. Six miles south of Mount Waller access is had to the Rikuru Valley by a very difficult path. The valley itself is fertile, well watered, and the climate is most likely healthy. The inhabitants would doubtless welcome us, and I trust a station may soon be formed among them. North of Deep Bay the country is very poor, hard clay plains and swamp alternating up to the north end of the lake at the Rombashi River. Even at Karonga's, the only populous part, much of the low ground is under water during the rains, and must be very unhealthy.

From this rapid survey it will be seen that we have choice of only two localities—namely, Bandawi and the Rikuru Valley. Eventually both positions ought to be occupied. The question is, which should be first taken in hand? Besides the advantages above mentioned, Bandawi can, without any very great expenditure, be made into a rival harbour to Kota-kota. A short breakwater is all that is required. If this were done, trade would almost certainly flow through the place. It is believed that a trade route already exists between the Rivuma River and Lake Nyassa, at Chitesi, nearly opposite Bandawi. This is a shorter route for traders from Kilwa, and would likely be preferred by them. The civilizing influences of commerce would thus be added to the Christianizing work of the gospel, and also a serious blow would be given to the slave trade. From Bandawi ready access is had to the Mangone country, and thence north and west to the country visited by Mr. Moir last July. Mr. Moir already talks of making Bandawi his headquarters on the lake. Against all this, the Rikuru Valley has the advantage of a better climate. I certainly do not underrate this advantage, but as we would have a sub-station and sanitarium at Mombera's within easy reach, the disadvantages of a lake station would be much reduced.

With respect to the country between Lakes Nyassa and Tanganyika, it will be necessary to

consider the report which Mr. Thomson, on his return, will give to the Royal Geographical Society. It has already been suggested that Merere's village should be occupied. Merere is now living at Marema, perhaps one hundred miles north-west of Lake Nyassa, and therefore, I fear, quite beyond what will be for some years the limits of the Free Church's field of operations. I am more inclined to look forward to having a station at Mambwi. It lies on the route between the two lakes, and already, as I understand, measures have been proposed to construct the road. If this were done there would be nothing to hinder the London Missionary Society, possibly in association with the Livingstonia Central Africa Company, from sending a steamer to Lake Tanganyika by way of the Shiri River and Lake Nyassa. From conversation I had with Mr. Thomson at Pambeti, I do not think that the route he followed is at all to be compared with the one I have now sketched out. Indeed, I fully anticipate that the London Missionary Society will ere long obtain all their supplies *via* Lake Nyassa, and possibly through the Livingstonia Central Africa Company. If this be a just anticipation, Mambwi would likely become an important place, and would be a good situation for a mission station. The cost of a road fit for waggons I could not estimate at less than £3000, or including European supervision, not much less than £4000. I would not recommend that Mambwi be occupied before the mission or the company is prepared to begin this work. The station should be planted as soon as the road is begun. Much waste of European labour would thus be prevented. Any extension of our field beyond Mambwi would be, in a great measure, determined by the position that the London Missionary Society eventually takes up.

I do not desire to give too favourable a prospect of trade. Ivory, of course, there is, but not in large quantities. India-rubber is produced about the shores of Lake Tanganyika, and trade in this article might be extended. Copper also is an article of export. Iron is found in abundance, and it doubtless would be largely used in local barter. Oil would likely not pay for export. It is not, however, to be expected that anything observable in the country in its undeveloped state could yield a paying trade. Until its natural productions are wisely stimulated, there can be no commerce to speak of. The ivory trade is not capable of development, though it may be transferred from the Arabs to English hands. Even though that were done it will never do the country much good, as it diverts the attention of merchants from other articles, the production of which would be more beneficial to the country. It is a saying among the Portuguese that the slave trade and the ivory trade have been the curse of Africa. I fully endorse the opinion.

As I mentioned in my report, I found the distance between the two lakes much greater than I expected. From the first protraction of my survey I made the longitude of Pambeti about 31° 20′ E. Owing to the absence of good landmarks on the Mambwi plateau, I cannot place much reliance on the survey. I have, therefore, accepted the results of my best sets of lunar observations as giving an approximately correct longitude. I have, therefore, fixed Pambeti at 31° 4′ 30″ east longitude. On a separate sheet I give details of my observations, in order that Mr. Stevenson or you may lay them before the Royal Geographical Society, that they may be re-calculated and recorded. I also send statement of the barometric readings made at Pambeti, on the mercurial barometer supplied by the Royal Geographical Society to Mr. Thomson, along with the corresponding observations made at Livingstonia; also section of country between the two lakes. My map is also enclosed. It comprises the northern portion of the lake and the route to Lake Tanganyika. I beg to request that this also be placed at the disposal of the Royal Geographical Society. If they see fit to publish it, I trust it may be done on the same scale as my survey of 1878, in order that they may be joined and appear as one. I intend to send a tracing of my map direct to Zanzibar to the members of the London Missionary Society party, as it may be very useful to them. Extracts from this letter and from my report might be sent to the society at home, especially my description of Pambeti and neighbourhood. For the same reasons as before, a copy of this letter should be sent to the Livingstonia Central Africa Company.—I am, sir, your obedient servant,

JAS. STEWART.