to have black Papuan skins and woolly hair. I have since read that the late Bishop Patteson found that they spoke a dialect of Maori, and he classed them among the Polynesians; and this appears rather to increase the puzzle, if the adjacent island of Lom-lom is inhabited by Melanesians. The men of Tecopia expressed to D'Urville the greatest abhorrence of their woolly-headed neighbours of the New Hebrides and Santa Cruz groups, so that they can scarcely live otherwise than as enemies to each other; and their mingling in small islands of the same group becomes all the more curious. The Cherry Island people are cleanly, they manufacture *tapa*, make very fine matting, and form a contrast in every way to the filthy savages of the New Hebrides and Banks groups. It would be a very interesting point to ascertain the exact limit of the two races, and to discover the Polynesian group to which the Cherry Islanders and Tecopians are most closely allied, as regards language and traditions. Time did not admit of my even attempting to investigate this and many other points of great interest; but I feel sure that there is much still to learn which would well repay the study, and that future visitors to these islands will have before them a very important field for geographical and ethnological research.

IX.—*Summary of Observations on the Geography, Climate, and Natural History of the Lake Region of Equatorial Africa, made by the Speke and Grant Expedition*, 1860–63. By Lieutenant-Colonel J. A. GRANT, F.R.G.S., C.B., C.S.I.

THE late Sir Roderick Murchison, our respected President, after presenting me with the Patron's medal of the Royal Geographical Society, impressed upon me the necessity of giving, for publication by the Society, some account of the journey through Africa, made in company with Captain Speke.

He had two reasons for this: one, that there ought to be a "quid pro quo;" and the other, that Captain Speke had made only a very small contribution, which appeared in the thirty-third volume of the Society's Transactions.

I have hitherto hesitated to comply with Sir Roderick's request; but I feel now that the duty is incumbent upon me, as the survivor of the expedition; and I submit these notes, with due respect, to the Royal Geographical Society.

True, Captain Speke's contribution of twenty-five pages was small when the vast extent of country traversed—the large field for description—is taken into consideration; but, when we

examine the map accompanying his memoir, we find that the country is so distinctly delineated, from his own observations and from information obtained on the spot, that, as far as geography is concerned, he had nothing more to say; the whole is seen at once upon a single sheet.

However, the Society were not of this opinion, and have, in a note at the head of Speke's paper, expressed their regret that Captain Speke had given so short an account of his important journey. I therefore feel invited to supply the blank and rectify the omission, which, I am bound to say, was never intentionally made by my lamented companion.

It may be stated here that he also contributed to the Society his work, entitled 'The Discovery of the Source of the Nile,' all his sketches of the country, of its animals, birds, and fish, and also made over to different scientific bodies every species of the Fauna or Flora collected. The country between Zanzibar and Kazeh has been fully described in Captain Burton's 'Lake Regions;' but, onwards to the Nile and Gondokoro, there may still be matter of interest untold and welcome to the members of the Society.

We shall therefore commence at Kazeh, lat. 5° S., long. 33 E., where the expedition arrived upon the 24th of January, 1861, having been detained on the journey from the coast by the desertion of our porters, and by a war that was raging between the inhabitants and the coast traders residing at Kazeh. It was not our business to interfere in these quarrels; we did not attempt to assist either side, and met with consideration from both. The leader—or rebel chief he might be called—of the natives came into our camp with a few followers and might have plundered all our property, while we, confident in our safety, were out shooting. The other, or Arab side, gave us a right hearty welcome, sending us porters and provisions while we were destitute in the forest, and meeting us with their followers on our approach to their settlement.

The foremost in kindness was Moossah, a native of the Indian territory of Kutch, in Bombay. Upon the day of our arrival at Kazeh, he led the way through a noisy throng and conveyed us to his house. Here a gay gathering of the influential traders in slaves and ivory, in full durbar dress, had assembled to greet us. The faces around me were all strange, but I had not much difficulty in picking out from among them a face and character I had heard so much of: old Snaay, the slave-dealer and cattle-lifter, with his long lean face and determined lip, was unmistakable. He looked uncomfortable and fidgeted about, but we soon had it explained to us that he was anxious for the interview to terminate, as he was leaving then and

there upon a campaign against the "rebel" natives, who had lately plundered him of twenty-five barrels of gunpowder. He asked us why we had not brought the rebel chief into Kazeh, dead or alive, and so engrossed was he with his expedition, that, though Speke presented him with a valuable gold watch by Macabe, set in turquoise, few words of thanks were uttered, and the old gentleman left, never to return.

These miserable wars in Central Africa originated, we were told, in a quarrel which arose between the slave of an Arab and a native of the country. They fought over some water at a well; the Arab slave was killed, and his master took revenge against the village. Other Arabs went to the support and other villagers helped to fan the flame, consequently, through these constant interchanges of "paying off old scores," there is never peace, neither will there be until the country has a settled government.

The evil effects of these fights tell disastrously, not only upon all those traders who caused the disturbances originally, but upon all persons travelling through the country. If a caravan —we will say like ours—is marching, the porters desert in batches or in a body as they approach the residences of the Arabs, for, like all mortals, they fear capture or death. The people in the villages have been taught to detest every trader and every traveller, for they have suffered bitterly by the loss of their slaves and their herds, and will not readily render assistance to a caravan.

This same system has been carried on for many years upon the Nile between Khartoom and Gondokoro. Only a few years ago a boat full of armed men would land for plunder, and decamp with it, perhaps with impunity; but the next boat and every other boat would be attacked as it passed the spot, or whenever an opportunity offered.

I would therefore here emphatically protest against any foreigner taking part in the fights of a country through which he may be travelling for scientific and other information, for I feel confident that neutrality is his truest and safest course.

We were invited and pressed to fight by every chief we saw, and by the Arabs also. The king of Karagweh asked us to assist him in killing his own brother; the king of Unyoro made exactly the same request; the king of Uganda wished us to go plundering, and the Egyptian traders would have been delighted to see us join them in their expeditions against the poor people near Gondokoro. If, therefore, Speke had mixed himself up with the quarrels of the inhabitants, the Royal Geographical Society would never have seen him return.

For fifty-two days we were sheltered at Kazeh or Toborah by

"Moosah," during which time we occupied ourselves in protracting our route, taking and working out lunar observations, registering the rainfall, shooting, collecting, sending reports and letters to England, attending to the sick and gathering every information regarding the countries to the north, more particularly those around the Source of the Nile.

Speke, upon his previous journey with Captain Burton, had seen that the waters of Unyanyembeh drained to the Lake Tanganika; he had seen that the Victoria Nyanza was 3750 feet above the level of the ocean, but he now knew that Gondokoro, upon the Nile, was but 1500 feet high. His main wish was, therefore, to connect the geography of both or all three regions —the Tanganika, the Victoria Nyanza, and Gondokoro. He wished to trace, from their source, the waters of the Nile which flowed from the highest slopes of Northern Africa. He formed his plans calmly.

Moossah's house at Kazeh was the rendezvous of every traveller and of every needy man. Here we saw people from India, Arabia, Uganda, Usoga, Madagascar, Kilimangao, and other African provinces; and here was the favourite resort of all the gossips in the country. Moossah himself had been for at least twenty years in the country; he was the oldest established trader and certainly the most influential; we therefore, through him, had the freest access to all visitors here, and gained information for our map. We ascertained from them the names and customs of every race that surrounded the Victoria Nyanza, the Tanganika, &c.; and were assured by Moossah that we should have no difficulty in getting hence to Egypt by descending the Nile, because it flowed from the great lake to the north.

But, to make such a journey a sure success, Speke devised that Moossah should accompany us as far as Karagweh, or even to Uganda. He knew that Moossah's fame as a trustworthy honest man would influence the kings of those two countries, and that some of his followers being from Uganda and Usoga, we should be following the direct route by having such guides.

Moossah himself was anxious to get away from Kazeh, as the Arabs, by constant war, had brought dearth, famine, and desolation on the country; he constantly had to supply their demands for powder, for which they owed him heavy sums. However, it was not fated that he should accompany us.

His health had been impaired by opium eating, and was further affected by his having kept the fast of "Ramzan." A supply of opium was upon its way from the coast, and he felt anxious for its arrival, as, if it was plundered, he thought he could not live. Week after week passed, and poor Moossah's drug never arrived; the small stock he had was lessened by

daily applications from his son and others whom he could never refuse, though he gave with a grudge; and so the time came for us to leave.

Meanwhile poor old "Snaay" and five other Arabs had been killed in action, and the remnant of them went to Moossah and told him that he should leave Kazeh at his peril; he must wait to defend it against attack. Under such circumstances, where no settled government exists, Moossah had to submit and had to take an oath of allegiance; but even when we left he still clung to the hope of joining us. However, his death soon followed. We had not left many days when his messengers conveyed to us the sad intelligence that Moossah had breathed his last.

This we regarded as a calamity to our expedition. Our prospects looked dark, two great men, our supporters and introducers to African chiefs, had been cut off within a few weeks of each other. One, "Snaay," had died in an inglorious manner in an inglorious cause, desolating the country, and "Moossah" fell a victim to his own indulgences; but he left a name for gentleness and kindliness of nature that will long be remembered. It may show the reader his worth and the importance attached to the event of his death, that couriers were dispatched to the kings of Karagweh and Uganda by his son to announce the decease. The messengers had separate instructions for these kings regarding our intended visit to them, so that the main object of our journey was never lost sight of by Speke.

The route we took from Kazeh to Khartoom may be divided into five regions, which will be separately described under these heads:—

I. From Kazeh to Kitare, in Usui.
II. From Kitare to the River Kitangule.
III. From Kitangule to Uganda.
IV. From Uganda to Gondokoro.
V. From Gondokoro to Khartoom.

I.—From Kazeh to Kitare, in Usui.

Distance 200 miles; elevation from 3180 to 4204 feet* above

* We started from England with six tested boiling-thermometers and two boiling-apparatus. All were tested at Zanzibar, and two thermometers selected and used upon the route—Speke boiling one simultaneously with my boiling the other. They did not give the same results with regularity; and I am inclined to think that when the heights are taken with the mountain barometer, or other more accurate instrument, our present results will be rather below than above the actual height. We cannot say whether five hundred, or even one thousand, feet may have to be added to the altitudes in this paper, as the two instruments used were broken at Gondokoro, and could not therefore be tested as to their error on our return to England.—J. A. G.

the level of the sea; mean of the temperatures taken between 1 and 4 P.M., from the 24th December, 1860, till the 15th November, 1861, 80°. Highest temperature observed, 24th October, 1861, 90°. Extreme cold observed 13th November, 1861, 55°. The rainfalls of January, February, and March were not measured, but I should say that the annual quantity of this district is under 34 inches. The expedition remained here from the 24th of January till the 15th of November, 1861.

This country is close to the watershed which separates the waters of the Tanganika Lake from the Victoria Nyanza Lake. In fact, we occasionally were upon heights which shed their waters north and south, and although in this tract we traversed 200 miles, none of the waters flowed northwards, but all to the Tanganika Lake; yet the streams were so small—in many cases mere springs or sources—it was conclusive that we were upon the watershed of the Equator, upon the north-eastern edge of the vast elevated area which sheds its waters to the Lake Tanganika, and upon the most southern slopes of Nile-land.

This journey was made in thirty-two stages, and during the whole of it we never lost sight of hills which, when not in confused masses of igneous rock, were in ranges or ridges pointing in a N.N.W. direction, averaging in height 3500 to 4000 feet, with villages, cultivations or forest in the valleys between the ridges. Many of the surface rocks were extraordinary, either cropping up in boulders the height and size of houses, or showing strange rock basins, where water lodged, and flat masses upon which the people cleaned their grain.

The last six stages of this district had a different geological formation. The rock was in stratifications of sandstone of various degrees of hardness, colour, and inclination, laid open to view by narrow valleys running northwards, and escarped sandstone rock upon their western sides. Since leaving Zanzibar, we had not met with so good an illustration of the geology of Africa, and it was an interesting part of our journey.

With this change of the rock, we had pure, refreshing, and clear water, very different to the insipid brackish water we had drunk since leaving the coast.

The deepest stream crossed was the Gombe, flowing, at the point we crossed it, to the north-west. It was in flood upon the 21st March, 5 feet deep and 20 yards in width, with little or no current, and flat banks. On the day we crossed it we noted one of those curious phenomena in nature—a quicksand, the only one we observed in our whole journey, yet so common in the rivers of India, and seen also at Simon's Bay, Cape of Good Hope. The altitude at this point was 3400 feet above the level of the sea, and this of itself is a strange coincidence, that a quicksand should be found at so high a level; but all this country is

saturated with water and sand, and it may be that the vast basin of the Victoria Nyanza—not so far away—may have something to do with this, as it rests about the same level above the sea.

The soil varied from sand to rich tenacious alluvial; occasionally red clay was met with, and the whole tract of low hills, rock masses, plateaus and valleys, was lightly covered with brushwood, forest, grass and crops.

Not a day passed while marching that we did not meet with villages, in which we generally encamped. The larger ones were strongly fenced against sudden attack by double stockades, made from trees carried from the forests, and had a hedge of euphorbia outside of this fence. The outer circle of all was a deep ditch. With this defence a village cannot forcibly be entered by any human being, and would stand an assault by bows and arrows as long as water and food lasted.

The huts have steep roofs of grass, are circular, and each set belonging to a family is stockaded from its neighbouring set. Within the enclosures, and sometimes within the huts, cattle and goats are kept, so that cleanliness is not the rule, although in this respect there are certain restrictions, such as that no workers in iron, and no animal deemed unclean, may enter the village.

The "chief" is supreme in his district; he expects, and often demands, tribute from all passing through his country, and if he does not get it he sends a flying column of men, armed with spears, bows and arrows, to try and enforce submission. His principal nourishment is a coarse drink, made by fermenting and boiling the grain of the country; and, though seldom drunk, he is generally in a muddled state.

He has as many wives as he can maintain, and as many slaves as he can buy or kidnap; but if they do not misbehave he treats them kindly. He has a natural religion, the instinct of right and wrong; he has no idols, and believes in a supreme spirit of good and evil being able to avert danger from himself, or to punish others. Although he holds courts, which are conducted with considerable ceremony and earnest argument, he can neither read, write, nor count time.

His dress is a sheet of blue cotton check, or chintz, tied round his waist and falling below the knee. Another sheet of similar material is thrown over his shoulders. The head, feet, hands, and shoulders are bare, except a shell-pendant as the mark of rank round his neck, iron rings on his ankles, and a stick or spear in the hand, completes the "Mteme," or Sultan.

The men of this province lead much the same kind of life as their Sultan, but necessity makes them industrious and active. They prepare the ground for seed with iron hoes, not knowing

the use of the plough or the bullock in agriculture. With the assistance of their women they cut the crops and clean them. They convey all the firewood in from the forest, attend the cattle, milk the cows, defend the property of their Sultan, and a few of them trade in salt, sweet potatoes, ground-nuts, grain, ivory, iron, slaves, taking such to the northern kingdoms, as well as to the coast opposite Zanzibar. They carry loads of 60 and even 70 pounds weight when employed as porters, but have an objection to carry cases of tin or wood, which hurt their naked skins. All articles made up for transport by native carriage in Central Africa, should undoubtedly be placed in waterproof sacks and not in cases.

The women are better dressed than the men: all of them wear a cotton cloth from the waist to above the ankles, while the majority of the men have the skin of a goat slung from one of their shoulders as their only covering. The women have their meals separate from the men, as M. Du Chaillu mentions in his Apingi Kingdom. They eat in the open air, with their children seated by them; in their household duties they are clean and tidy. The women slaves are the first to rise in the early morning and they work all day, grinding corn with a stone upon a slab. Their other employments are to clip the heads of corn in the fields, and to carry the produce on their heads in bark baskets to the village. They cook the meals of their husbands and prepare the native beer. Sometimes they will accompany a caravan to the coast, carrying their infants with them, and will occasionally engage themselves as porters. In height they are shorter than the men, differing in this respect in the same way as we do. The height of the men is perhaps two inches below the average of Englishmen.

Slavery is the curse of the country, and the African races will continue this practice of buying, plundering, and selling slaves to traders as long as the Zanzibar Government, the Portuguese, the Egyptians, and the Chinese support it or connive at it. When travelling in Africa, we saw that no one of any *social* position, and who was at all ambitious, could enjoy life without slaves. Purchasers generally obtain them from tribes different from their own, and give the highest prices for natives of Usoga and Uganda, considering them more faithful and attached than the slaves of races contiguous to themselves. It was observed that the master and mistress of Central Africa treat their slaves with kindness, looking upon them as part of their property, which they feel bound to care for; and in gratitude for this the slave generally becomes attached to his foreign home.

The condition of slaves becomes very different when they fall into the hands of a dealer, an Arab or other trader, who takes

them from market to market in gangs tied together by the neck with heavy chains—a brutal precaution which never entered our heads to adopt—and finally, when no sale can be effected, he conveys them to the coast, where, at great risk of capture by our men-of-war, he ships them on board a native craft, never again to see their old homes. This is the most cruel period in the life of a slave, this forced transportation. accompanied by extreme privations. It would be a relief to hear that the demand for them was summarily stopped at the ports of embarkation; for *then* these slave-dealers and natives of the interior would, of necessity, cease to take them to the coast.

The Mahomedan Government of Egypt is, I regret to say, extending its influence in those parts by large acquisitions of territory; and it becomes its duty to control the desire of its subjects to make themselves masters of the slaves of Abyssinia and Central Africa. Annexation by this Power would be a serious evil; and, for the sake of the fine independent races of Uganda and Karagweh and their fertile country, I hope and trust that civilisation may be introduced among them by Christians, not by Mahomedan races, who would turn the whole country into a market for slaves. The trade of the east coast of Africa is being developed more rapidly now since the opening of the Suez Canal, but the interior should be penetrated to obtain its rich products, and foreign traders should push on from the east coast to Egypt, protecting the people from Mahomedanism, forming trading depots at different points, and showing their intolerance of slavery.

Travelling Season.

I may conclude my notes upon this district by making the following remarks upon the seasons as taken from a field-book kept daily, and will show the favourable times of the year for travelling. Natives are often obliged to travel at all seasons, but will not readily do so at the desire of a master; they prefer to travel during certain months, such as March and April, when the crops and wild fruits are about to ripen, and when they can help themselves as they pass the fields or go through the forest; or they prefer to start in August, after their crops have been gathered and they have had a feast on the new grain. At this time of the year they begin to burn down the tall grass, which might conceal wild animals. The seasons they naturally object to travel in are when the country is parched by heat in June and July, or flooded by water in December and January: in these times food has to be purchased, as the

harvests have been gathered, and travellers suffer in health from hunger, heat, cold and rain.

January, 1861.—Rain falls in this and the three preceding months, softening the soil and preparing it to receive the seed; acacias and ground-nut are in blossom; new grass and young rice are above ground, and a few fruits are forming. Black storms from N.N.E., with thunder and lightning. Wind N.E. and N.N.E. Average temperature during the month, taken between the hours of 1 and 4 o'clock, 76°.

February.—Rain continues to fall this month. The wind is almost cold; the grass and young crops are a good height, and seeds are ripening. Wind W. and S.W. Temp. 76°.

March.—This I call the beginning of summer, and it may be called a dry month, though showers fell upon the 22nd and 23rd, the time of the vernal equinox. The paths and much of the country are still covered with water, the accumulation of rain during the past three months. Blossom is plentiful, the grass is high, and Indian corn, in a few places, is ripe. The S.E. wind blows daily, bringing with it fits of sneezing, similar to what we have in England during hay fever in May. The air is impregnated with dry, imperceptible dust. The wind occasionally blows from the E.N.E. quarter. Max. temp. 80°, min. 62°.

April.—This month (on the 3rd) was the commencement of the rice-cutting at Mininga. There are few days of rain. The morning breeze is still from the unhealthy south-east quarter, and many suffer from fever. Temp. 80°.

May.—The harvest is general during this month, and grain is abundant. No mention in my journal of any rain in May. Average temp., at 2 P.M., 83°.

June.—I call this the first of the autumnal months, because the harvest has all been gathered and housed. The poorer classes are allowed to collect what they can of grain and sweet potato off the fields where the harvest has been gathered. At sunrise the mornings are piercingly cold; a haze obscures the outlines of the hills; the sun rises in a haze, which does not clear off till 9 or 10 A.M.; and even during the day a film of haze hangs about the fields. The wind blows with regularity from the S.S.E. and S.E., making us sneeze and giving us hard coughs and colds. At night the sky, for forty degrees of altitude, is misty, and the strongest wind that blows is from the south-east. By the end of this month all deciduous trees have thrown off their leaves, and nothing but evergreens refreshes the eye. On the 1st of June, at 2 P.M., the temp. was 75°.

July.—The fields are bare and dusty; the men employ themselves with long-handled rackets in threshing the corn and winnowing it in the southern breeze. They gather the honey of

the season (this month corresponds with our September), attend the young calves, and burn down the grass to allow fresh to spring up. The mornings are close, and feel like rain; the atmosphere is still thick, the days are gloomy; heavy clouds appear in the north, and a plump of rain falls upon the tenth. The unhealthy south-east breeze still continues, but it is not so constant now. At 7.50 P.M. of the 7th I observed a comet near Ursa Major. On the 9th its position was more distant from the north; the tail pointed away from the constellation, and was about the angle of 45°.

August.—This is a gloomy month, the atmosphere is thick and the mornings close. The people make beer daily from their stored grain, and drink it off when it is fresh. Arab traders now march for the northern kingdoms, and native dealers travel about selling and bartering slaves, salt, ground-nuts, &c. Little or no rain falls.

September.—The first month of the Central African winter, for the aspect of the country is grey and wintry. The days are beautifully bright and clear. By the 12th, the unhealthy south-east wind had gone to easterly, the streams had become mere chains of ponds, with dormant vegetation, and about the Equinoctial time on the 24th, we had merry peals of thunder, with lightning and a northerly breeze; two days later, heavy rain followed the storm.

October.—The mornings are cold, the days oppressive, but sickness is less, and it is a favourable time for marching to the coast. We met several caravans; there were pleasant showers and thunder-storms, all the more acceptable, for the water-courses were dry and drinking-water was scarce. At Usui the ground is broken up for seed. The wild grass is either withered or has been burnt down, and certain trees begin to drop their foliage. The only vegetation is such as grows all the year round, namely, sweet potato, plantain and manioc. Average temp., between 1 and 4 P.M., 84°.

November.—Rain came with the new moon upon the 2nd, with occasional storms and high winds. It continued during the month, falling almost every day with a N.N.E. and N.E. wind, and most frequent in the afternoons. Caravans for the coast travel this month. The ground is prepared for receiving the seed. Indian corn and manioc is ripening. Winds variable; those from the S.E., E., E.N.E., and even N.N.W., are recorded. 1½ inch of rain fell in 15 days during the whole month. Max. temp. 79°; min. temp. 58°.

December.—The rain of the last month has brought up the brier, and a few blossoms are observed: but no record of this month can be offered, as we were in the neighbouring province

of Karagweh, where the rain-gauge marked 2·80 inches for the whole month. This fell upon fourteen different days, and the greatest record in 24 hours was on the 29th December, between 11 A.M. and 5 P.M., when 1·16 inches fell. The temperature during this month at places between Ugogo and Kazeh (altitude 3200 to 4000 feet) averaged 84°, between 1 and 4 P.M.

ABSTRACT OF THE ABOVE REMARKS.

Driest months—March, April, and May.
Partial rain in June, July, August, and September.
Heavy rain in October, November, December, January, and February.

II.—DISTRICT FROM KITARE TO THE RIVER KITANGULE.

We have now entered upon the northern slope of Equatorial Africa; every drop of water in this district flows to the Nile. The distance along it is 120 miles, travelled by us in fourteen stages, across ridges of sandstone, averaging 4000 feet above sea-level; pointing, though not with regularity, to the north-east. The valleys are 200 to 800 feet lower than the highest stratifications of rock, and are of various forms. Some are narrow passes, with brushwood and cultivation; others are broad expanses of grass, rush, and bog, where giraffe, rhinoceros, hartebeest, cranes, and geese are very frequently seen, and which at no very distant period were great lakes; or the valleys are deep depressions, reservoirs of water 3 to 10 miles in length, frequented by hippopotamus, otters, water-bok, and full of fish.

To the west of these ridges, and upon the upper strata, at the second stage, the country has been upheaved into a series of volcanic mounds, which are shaped like saddle-backs and cones. Here the hill-sides and paths are strewed with sharp fractured sandstone and fragments of quartz.

The more common hill or mountain of Karagweh has a round outline with steep sides, and is covered with a coarse description of grass 3 feet high, which gives to all of them a bleak look. The only other vegetation consists of a few shrubby trees, which grow in the courses of the ravines down the sides of the mountains.

There were no rivers crossed in this route, but merely rivulets and bogs; the hills are so steep, no streams accumulate to any size. This was the highest portion of our whole route; it was also the highest inhabited part, for Rumanika, the proprietor, resides all the year round at an elevation of 4661 feet, and from our encampment at this altitude, looking to the west, we could count four ranges, one receding from the other, and

pointing northwards. These ranges are of uniform height, and part with their lakes and streams to the valley of the River Kitangule. Far beyond these ranges, at a distance calculated at 50 miles, we took the bearing (C.B. 295°) of a volcanic cluster of three sugar-loaf mountains in Ruanda. This was a very interesting sight, causing our intense admiration on account of their towering height—say 10,000 feet; but on account of the foggy atmosphere, we could only see them occasionally, while the sun set behind them. The natives said of them—for we could not go so great a distance off our route to visit them—that they were so steep that no one could ascend them except on his hands and feet.

The cultivations of Karagweh are not confined to the valleys or lower ground; but upon the western slopes of the hills, where there are no escarpments or fragments of rock to spoil the crops, beans, English peas, sweet potato, ground-nuts, and pulses, are grown in sufficient quantity to support the inhabitants; and groves of plantain are abundant.

Karagweh, being at the south-west corner of the Victoria Nyanza Lake and the high road to the ivory-producing countries of Koreh, Uhia, Kittareh, Unyoro, and Uganda, is the only route taken by traders and travellers from the sea-coast to these northern kingdoms. It has, therefore, become a mart of great convenience for the meeting of inland and coast traders. Here ivory is bartered for beads, salt, iron, copper, cloth, and slaves. The Zanzibar merchants have depots here, detaching parties to the west and north for the purchase of ivory and slaves. This trade is sanctioned by the Sultan Rumanika, who is a kind, amiable man; the least extortionate of all the chiefs we met, consequently his capital has become a far more important market than that of Kazeh, where there is no proper government. The only drawback to Karagweh is the difficulty of getting through the excessively extortionate chiefs residing between it and the coast, and there is no avoiding the heavy taxes these chiefs demand from caravans moving either from or to the coast. The resources of Karagweh are not yet developed on this account; but as long as Rumanika lives, and while the traders behave justly, the country will continue to compete successfully with the other markets for ivory in Africa. It would be of great advantage to the east coast traders if they thoroughly established their credit in this part of Africa, for unless they do so, the Egyptians from the north will descend with their hordes and sweep this trade down the Nile.

The tribes who arrive with ivory, coffee, slaves, &c., are numerous, and give constant opportunities at such a rendezvous as Karagweh of obtaining information regarding their nations.

Captain Speke took advantage of their presence to glean for his map, and hear all about this lake-country. He heard here, from some men of the Sultan's, who had just returned from a journey to the north, that one hundred foreigners, in ships from Egypt, had been attacked by the Wagani, who plundered them of clothes such as we wore, and beautiful rare Venetian beads. This was intensely exciting news to us, for we knew they must be a party who had ascended the Nile; but how were we ever to reach them? It was also added, that their guns were so large that they knocked trees down; and their ships were so commodious that they carried white sails made of cloth, and had animals on board of them. Nothing could be more conclusive to us, and Rumanika showed us some beads which were entirely different in size and colour from those used upon the trade-line of the east coast. We therefore pressed the Sultan daily to allow us to proceed on our route.

Besides getting the above welcome news, we had the advantage of constant intercourse with those who lived here all their lives. The Sultan and his late father, Dagara, and his family, had settled here for three generations or more; and though they, individually, had never travelled beyond their own kingdom, they knew by tradition, and from their own servants and slaves, every country and lake within 100 to 200 miles of them. They gave us freely all the information they possessed; pointing to the countries they spoke of, such as the southern ends of the Luta Nzige and Victoria Nyanza Lakes, and mentioned their distances in days' journeys. The Sultan stated that a canoe could sail all the way with the exception of two miles of obstruction in the Kitangule River, from Uganda to Karagweh Lake. The family were intelligent and well-informed, we therefore were disposed to place reliance on what they told us. Neither were they superstitious about our making astronomical observations; but I attribute this friendship very much to our having been the guests of so well-known and trusty a man as the late Moossah of Kazeh. When we left we parted as good friends as when we arrived, and this is sometimes difficult to do in Central Africa.

Here, and in every other territory we passed through, have I seen Speke, compass in hand, with native travellers around him, getting from them the positions of Uganda, Unyoro, Ujiji, Ukereweh, Luta Nzige, Victoria Nyanza, Usoga, Ugani, or places we had never seen, and hearing from them the descriptions of the races around the lake. In fact, we never met a traveller of any intelligence who was not put through the points of the compass in this way; but none of those who lived on the western shore of the lake could ever tell us who lived

upon the opposite shore. As we changed ground from camp to camp, going northwards, Speke, by following this system of observation and native interrogation, was able to secure cross-bearings of all the countries which appear in his map. And as far as we inspected afterwards, these cross-bearings were wonderfully near the truth; for this reason I predict that what we were unable to prove by inspection will be found equally accurate. In one instance, this is already confirmed. Speke laid down the Luta Nzige Lake entirely from native information: it was afterwards visited by Sir Samuel Baker, and its northern extremity had not to be altered from Speke's map; and the southern end has yet to be visited before it can be shown that Speke accepted wrong bearings. This case I instance to prove that when information is properly sifted and obtained from natives of the upper and intelligent class, it is decidedly reliable.

The countries which extend along the south and west of the Victoria Nyanza had their representatives constantly at Karagweh, and it was of great interest to us to talk with them. A trader of Mombas, named "Jooma," the agent of a house in Zanzibar, and speaking a little Hindostanee, was, perhaps, as well informed as any of the natives. He had traded for ten years in different parts of Equatorial Africa, had seen Kilimangao, Ukereweh, Koreh, Ujiji, Uganda, and knew the routes to these places by heart. While on his way to Chaga, near Kilimangao, he had met Captains Burton and Speke at Ugogi, and delivered some letters to them. He described the changes of colour in this mountain, but not knowing what a snow-capped mountain meant, he did not understand that snow could produce this difference of appearance in tint—white, black, green, brown, and scarlet successively, if viewed between the times of daybreak and darkness. He believed that all this was supernatural, for he became ill when he wished to ascend it, and said every black man was affected in the same way by it; though white men, if like Speke, might not be so. He understood the mountain to be full of treasures in gold and other minerals, and he picked up some stones at its base which were the colour of some red cornelian links which I wore; but no Arab would dare to dig this mountain, for he would certainly be struck by some malady. Poor "Jooma" was full of superstitions.

As this route will have to be explored when the eastern shore of the Victoria Nyanza is determined, I may mention here the experience of Jooma when marching between Ugogi and Chaga, near Kilimangao. He had a wholesome dread of the Masai people, who, having no chief Sultan, are split up into

small states, each one demanding of the traveller cruelly large taxes; and this fact is the barrier to successful exploration in this portion of Africa. Though Jooma had sixty-four guns with him, even this number did not keep off the troops of natives, who attacked him. But, at last, terms were made, Jooma got away; and he never could be induced to go there again. I mention this to show the difficulties of this route, and that it would be more advisable to explore the eastern shores of the Victoria Nyanza by boats from its southern shore than to attempt a passage through the Masai to the eastern shore of the lake. Two of our followers had gone from Zanzibar, *viâ* Kilimangao,* to within three days' journey of Usoga, where they had heard of large boats capable of holding 60 men; and had also heard of men on horseback, probably those races to the south of Abyssinia; and had seen a salt lake, called by them Leebassa, probably the Naivasha of Wakefield.

Jooma states that the Masai race are savages compared with the people living at the south extremity of the Victoria Nyanza, which he visited in 1852 with 21 followers. He arrived at Muanza, the point where Speke first discovered this lake in 1858, and from it he could see the island of Ukereweh indistinctly. He obtained a boat and 24 paddlers, which landed him on the island of Wœzee in five hours. This island is peopled, and contains cattle. He was sheltered, and got some fish. He paddled the whole of the next day till sunset, when, arriving at the island of Ukereweh, he was hospitably received by the Sultan Machoonda, who still lived in 1862. This Sultan seems to have been a thorough prince, for he entertained Jooma for three months, giving him a present of 25 cows, two goats, &c. Jooma says the prices of all articles in those days were more moderate than now; for instance, he purchased 20 fish for one string of beads, a goat for four strings, and a cow for ten. Small tusks of elephants were to be met with. And on my venturing to doubt that Ukereweh was an island, he indignantly replied that it was a very large one; and denied the possibility of its being the mainland, for "how could the lake fall to permit of Ukereweh being the mainland, it neither rises nor falls here? Did I not reside on the island for three months?"

When sailing from Ukereweh to the mouth of the river Kitangule he had been attacked, and was driven for shelter on the island of Kisseewah, under Lohangarazee, at the mouth

* I prefer Jooma's way of pronouncing "Kilimangao" to that of other people who call it Kilimanjaro, because the derivation is evidently "the shield mountain," a conical volcanic mass or peak rising above the country, in the same way that the boss or centre part in some shields rises above the shield: Kilima=mountain, N'gao=a shield—the mountain like a shield.

of the Kitangule (I mention this as a link in my proof that the lake extends from Ukereweh to the River Kitangule). But, continued Jooma as he addressed me when at Karagweh, "when the King of Uganda sends his boats for you you should be all safe, and the voyage might take you about two months." There is no doubt that a canoe, going along the shore, as it has no compass and no sails, would take a considerable time upon such a voyage of 120 miles, but even with a native crew, going into and out of all the bays, it ought not to take half this time of two months. This information is copied from my journal written on the spot.

While delayed at Karagweh, I was very much struck by the extreme blackness of skin in a race who came there from the Lake Victoria direction to sell coffee. The blackness of their skins reminded me forcibly of the races dwelling in the swampy regions of the Terais of India, and this to me at once marked their origin as a race living among lakes or swamps. They were Wahia, or Wazeewa, who live on the shore of the Victoria Lake to the south and north of the mouth of the river Kitangule, and are considered an inhospitable, bad race; but we experienced no unkindness from them.

They, the Wahia or Wazeewa, are dark, wiry, sturdy, broad, round-faced negroes, who allow the hair of their faces and of their small beards to grow wild; the woolly hair on their heads stands out in great thatches, which shade their faces. They differ from almost every other race, except the Waganda, in having no teeth-marks, no skin-marks, and no teeth extracted, and they may be considered as the link between the people of Unyamezi and Uganda. The heads of the men are ornamented with a single horn, the curved horn of a sheep, a goat's horn, or that of the waterbok, a new species of water antelope seen by Dr. Kirk in southern lakes, and sent home to the British Museum by Speke, and called after him Tragelaphus Spekii. The skin of a cow is their chief dress; this has the hair on, and is friezed on the inside and coloured yellow. The hairy side is worn next the skin, but reversed during rain; it hangs to the middle of the thigh by being tied by a knot at two ends over the right shoulder—the lower corners are rounded off. Besides this handsome skin, the Mohia robes himself with a yellow bark cloth, or one with black zigzag stamps upon crimson ground; so dressed, and smeared with grease, he is one of their upper class.

They carry a single spear of a remarkable pattern, for it differs from all the spears seen in Africa. The staff is 5½ feet long, of a white knotty wood, and not of bamboo, for bamboo is not indigenous to swampy countries, it chooses rather to grow

away from water. The iron blade is a broad oval, or of a heart shape, having a nick or shoulder to it, so that it may remain in an animal. They also wear round their ankles rings of solid iron, polished, and no thicker than the quill of a duck, and a Mohia may occasionally have a massive armlet of ivory round his arm above the elbow.

Their women are pretty, and are particularly clean in their persons and dress; they were not observed to grease their bodies, but their skins are well washed, and before sitting upon the ground they spread out some leaves so as not to have their cow-skin and bark robes soiled by the earth.

I have been particular in my description of this swamp-living race, as I wish to show that there is a distinct fashion of dress, of caste or clan-marks, and of arm, in every race we met in Africa.

Each nation or race felt a pride in adhering to its own fashion, and no two countries were ever observed to dress, mark, or arm alike. Therefore it was that we became familiar with the aspect of the different races we saw, and could distinguish any stranger, not alone by his face or language, but by his dress, caste-marks, and arms, as soon as he stood before us, just in the way that we recognise a foreigner by his outward appearance.

There was not a race along the western half of the Victoria Nyanza Lake, or between its shores and our route, of which we did not meet distinct types to converse with, and make notes upon their country, their dress, ornaments, arms, habits, &c.; but it might tire the reader to describe them all with minuteness, suffice to say of the fashions in Equatorial Africa, commencing from the south of the Victoria Nyanza and going round the western side of the lake to the north, that we saw the Wanyamezi perfectly happy with the skin of a goat as his sole covering. The Karagweh people tie a neat flap of leather around the loins, shorter in front than behind; the Wahia have been described. The Wakoreh make the blades of their beautiful spears 15 inches long. The Waruanda have a flap of leather around their loins of almost indecent shortness. The Waganda dress in salmon-coloured shawls made by sewing together several strips of bark, and in handsome robes, like our skin carriage-rugs, but made of goat skins, antelope skins, &c., and show less of their bodies than any African race I know of; their heads, arms, and feet are alone uncovered, for they so robe themselves that all the rest is concealed; besides this, when crossing rivers, they wear a bandage like the letter T, and carry their smart clothes upon their heads.

The next races upon our route were the Wanyoro, who

expose the chest and back, robing the rest of the body to the knees, or to the ankles, in kilts of bark cloth, skins, &c., but they are a slovenly people. The Wakidi are at once distinguished by their lithe but muscular figures, and the tight iron rings round their necks and arms; the men wear round earrings of brass or iron, and, when they can procure it, they carry the fat of a cow or a goat, for anointing their bodies, in a coil round their necks, so as to have their arms free for their spears and shields. Lastly come the Wagani, who stand perfectly nude before you, but quite unconscious of their nakedness, for they ornament their heads, their ears, lower lips, necks, arms, waists, knees, and ankles with feathers, cowries, beads, and iron, not wearing any leather or cloth coverings. They are when so decorated and painted with red earth and ashes, in zebra-like stripes, the most dashing race we observed, and stand in graceful attitudes unknown to us who clothe ourselves from head to foot. After these races come the Bari people, at Gondokoro, who have a peculiar fashion of head-dress, and are naked; there were other races of Kitch, Shillook, Nouer, &c., who wear skins and a few clothes, till we reach civilization and people clothed from the markets of Europe.

All those races can be recognised by their weapons, by the length of the spear handle and the shape of its blade, as the make and fashion is different in each. Of all the spears seen, the longest and heaviest is that used by the Waganda, and the slightest that of the Watuta—a plundering, rascally, marauding race, with no homes, similar in most respects to, and I believe identical with, the Zulu Kafirs whom we had the opportunity of seeing at Delagoa Bay. Both Watuta and Zulu circumcise, and wear a long appendage to conceal the circumcision; and, in my recollection, we saw no other race who observed this custom, so that they are easily distinguishable. The Watuta were upon our route on several occasions, and we have visited their deserted camps; they are a cowardly race, preying upon the weak and defenceless, and travelling in flowing columns over many parts of the country.

In concluding these notes upon races, the following table will show the reader the difference in the arms and caste-marks of the races we were amongst, and, considering how few in the present day adhere to the arms of their forefathers, it may be of interest to note those still existing in Central Africa. But, before proceeding with them, I may mention what we were told by an intelligent native trader, named Keengo, of two races he met with from the country to the east of Uganda, while on a plundering expedition (which was a failure) with Soona, the former king of Uganda, who wore an armour of

Names of Races.	Guns.	Spears.					Shields.		Bows.	Arrows.	Caste Marks.	Teeth Marks.
		Handles.	Width of Blade.	Butt.	Length of Blade.	Total Length.	Wood.	Leather.				
		ft. in.	in.	in.	in.	in.			feet.	feet.		
Wazaramo . .	Few flint .	..	..	..	..	..	None	None	5	2 to 3 in quivers.	Smear the bodies with a pomade of oil and red clay.	Not noted.
Wagogo . . .	Few flint .	4 6	..	5	8	67	. .	Curved and painted	..	..	, ,	Not noted.
Wanyamezi and Wasoombwa.	Very few flints.	0 43	1	5	11	59	. .	Oval hide . . .	5	2 to 3 not feathered.	Three stripes on each temple, and a perpendicular line on forehead to the nose.	Upper incisors filed, lower incisors extracted, this makes the men lisp.
Waiufa . . .	None . .	0 44½	1	2	9½	56	*	, ,	..	..	Tattoo on foreheads and noses; circumcise.	One or two lower incisors cut.
Wasoi . . .	None . .	Wood, not Bamboo.	..	..	..	70	None	None	6	2 to 3	Double serpent blistered tattoo marks on chests and arms.	
Wanyambo and Karagweh.	None . .	Not Bamboo	†	..	..	70	None	None	6	3½ feathered.	A few blistered tattoo marks on the trunk.	
Wakoveh . .	None . .	0 45	1½	5	21	71	None seen . .	None seen . .	Saw none	Saw none.	. .	
Wahia . . .	None . .	0 61	..	5	10	76	None seen . .	None seen . .	Saw none	Saw none.	No caste marks seen	No teeth marks or extractions seen.
Waganda . .	None . .	0 19 / 0 49	3	12 / 5	23 / 28	‡ 54 / 82	Pith wood, circular and kite shaped, having a boss, size ‡ 2½ feet diameter.	, ,	None. .	None . . .	No caste marks . .	No teeth extracted.
Wanyoro . .	None . .	0 54	2¾	4	14	72	Kite shaped . .	. .	None. .	None . . .	Cauterising marks, but no regular caste marks.	Lower incisors and eye teeth extracted.
Waguni, Madi, Chopeh.	None . .	Bamboo 0 74	..	6	16	96	Pith, lozenge shape	Cow hide, oblong .	None. .	None . . .	Paint their bodies red and ash colour.	
Wakidi . . .	None . . .	..	..	..	..	72	. .	A square oblong stretched on a stick.	None .	None . . .	. .	People in the Usoga direction are said to wear an iron armour and carry iron shields.
Wamara (from hearsay).	None . .	None .	..	..	..	..	. .	Buffalo hide , .	None. .	None . . .	No information . .	Use a sling and stone and wear sandals.
Shillook . . .	None . .	Wood not Bamboo 0 56	8	0	25	91	. .	A long oval, 4½ feet long, of rhinoceros or hippopotamus, with stick along it.	None. .	None . . .	. .	
Bagara Arabs .	Few or none	Wood .	4 to 5	..	25	109	. .	. .	None. .	None . . .	Their hair is plaited down the back to a cue or to several cues.	

iron over their faces and loins, and carried iron shields. They were very brave, and equal to eight times their number of Waganda. The same traveller also told us that a troublesome race called the Wamara, living in the Masai direction, at the north-east corner of the Victoria Lake, use a sling and stone, and a shield made of buffalo hide, never using a spear, and that they wore sandals. We met with no example of either of these races, nor of any race living upon the east of the Victoria Nyanza, which proves the great extent of the lake in this direction.

Before concluding this district, a few notes may be made upon the seasons, but we were not able to do much from the fact of having been laid up with sickness from the 15th of November till the 20th of April:—

November.—During this month, plantain, sweet potato, ground-nuts, Indian corn, beans of a small description, and pulses, are obtainable at Karagweh, and the hills are covered with grass, but not of a good description for grazing. We had rain on fourteen days of this month; it began with the new moon on the 2nd, but the total fall amounted only from one to two inches; max. temp. 76°, min. 58°; wind north-east.

December.—Rain fell on fourteen days of this month; amount, 2·7 inches, 1·16 inches falling on the 29th, between 11 A.M. and 5 P.M.; max. temp. 71°, min. 57°; wind north-east.

January.—Rain fell on fourteen days of this month also, amounting to 3·3 inches, the greatest fall in one day being ·83 inch on the afternoon of the 10th; max. temp. 71·7°, min. 59°; wind north-east.

February (from Speke, Appendix F).—Rain fell twelve days of this month; amount, 3·6 inches.

March.—Rain fell eleven days of this month; amount, 3·9 inches. Plants were in flower and fruit during the months we were in this district, namely from November till middle of April.

April.—I was informed by the brother of the king of Karagweh that the greatest fall of rain during the year takes place here between the 15th of April and the 15th of May, lasting for thirty days during the month of Ramzan, and I see this confirmed in Speke's Appendix, for 8 inches are recorded for this month.

III.—From Kitangule River to Uganda Capital.

Hitherto the characteristic features in our route from Kazeh had been uplands, steep sloped hills, deep narrow valleys, with insignificant streams easily waded—a country, in fact, without

a single engineering difficulty; whereas now we enter upon a region abounding in deep streams, with two navigable rivers which would require extensive bridging before there could be thorough communication.

We made the distance of 145 miles in 24 stages, but, on account of the winding nature of the route, to avoid swamps and swollen streams, 50 miles might be added as the more correct distance travelled.

The country is the western shore or side of the Victoria Nyanza, and is perfectly different in physical configuration to anything we had yet seen upon the journey. It has no doubt been a plateau of 4000 feet high, as the uniform level and the level tops of the existing hills are a distinct evidence of this These hills, or remnants of an original plateau, are often solitary, and consist of masses of stiff clay and boulders hitherto impervious to the action of the constant moisture at the Equator. The softer parts of the original plateau have been washed away to a depth of 300 to 400 feet, at intervals averaging a mile apart, consequently to walk across this is to go through a bog; ascend 300 feet, keep level, descend again to another bog, and so on during the whole march.

The vegetation of these parts is very distinct and interesting. A thick reed, 10 feet high, covers the flat tops of the hills, a few trees grow upon their sides, below the trees are the huts of the people, sheltered by dense masses of plantain trees, and, lowest of all, a tropical vegetation of trees, creepers, and papyrus, hide the vile swamp of tenacious mud in the channel between the different ridges of hill.

When standing on these heights to view the country round, the breeze is cool and refreshing after crossing the mosquito-filled swamps beneath, and as the eye is stretched from the feet to the horizon, in succession you look over trees into valleys of various forms, often square, and many pointing to the lake, but filled so full of vegetation that their exit cannot be seen. Beyond the valley rises another hill similar to what you stand upon, and beyond it is the horizon, without a peak or mountain in the sky-line.

The River Kitangule is the first important stream to be described. Several natives of Karagweh told us that the people of Urundi were in the habit of floating timber down this river, and they concluded that its waters must come from the head of the Tanganika Lake, but we were able to show them the fallacy of such reasoning by the difference of altitudes of the two positions, and by the barrier of the Mount M'foombiro range It probably has its rise in this mountain, but we saw it fed by four lakes in Karagweh, which radiate to it.

The Kitangule, at the point we ferried it, runs through a plain which is 20 feet to 40 feet above its level. The view, looking up stream, shows a high steep left bank and a hilly wooded horizon, with a shelving right bank covered with papyrus. It is a majestic stream, 5 to 6 fathoms deep, 80 yards or so across, and fringed with papyrus for a considerable width, with a current of 3 to 4 miles per hour. From one dry bank to the opposite one is 250 yards across, and no foundation for a bridge could conveniently be got nearer than this, the intervening space being white shingle, rushes, papyrus and the river.

The canoe which took us across was a single timber the width of an ordinary easy-chair, and 15 yards in length, hollowed out. It carried my party of fifteen Waganda, their dogs, and their large shields, with ease. At starting, on account of the strong current, we had to pole up stream, by the edge of papyrus, for 30 yards, the paddles were then plied rapidly to enable us to hit off the exact landing by slanting down with the current. I had a sounding-line all ready, and commenced to use it, but neither the head ferryman nor the Waganda officer in charge would permit me to make any use of it, even though I offered handsome presents; they said something would certainly happen to the boat if I sounded, and the king of Uganda would take their lives if anything happened to me. Speke, who had travelled this route a few months before me, found the same objections made.

His course was somewhat different from mine when proceeding hence to Uganda capital, and he saw the Victoria Lake at points where I did not. His first view of it was from Mashonde, and afterwards he constantly came upon it, as shown at the end of this paper under "Extracts from Speke's Work."

It was always intended that boats should be sent from Uganda to convey me from the Kitangule to Uganda, but, after being a settled question, the plan fell through—no boats could be found. Those we saw were unfit for such a voyage, and the risk to life and property would have been great, but this might not have stood in the way had there been no other obstacle. I had been assured by Rumanika of Karagweh, and others, that boats would certainly be sent for me by M'tessa, but the representatives of both kings took such precious charge of me, and especially of themselves, that they would not attempt the voyage. There was no overruling them, and my disappointment was more than I can describe.

It may be mentioned here that so late as the year before last, in 1871, M'tessa, king of Uganda, sent a party of his

soldiers all the way to Zanzibar with presents for its Sultan, begging, amongst other things, that men might be sent him who were capable of building ships, by which he could make excursions on the Victoria Nyanza. His father was in the habit of making such voyages, but was seldom successful; but, if M'tessa was supplied with the means, I think he would gladly assist any traveller in the exploration of the lake and the countries on its eastern shores.

The first indication of the presence of the lake that my party had was two days after we had ferried the River Kitangule, when, to the north-east there was a plain extending to the mouth of this river. I took the bearings of all the higher ground; but, from north to east—in the lake direction—all was a dead flat to the horizon, there was nothing to take a bearing upon, and the course of the Kitangule, through this plain, was marked by a winding foliage of green. The bearings then taken are as follows, no compass variation has been applied:—

Compass Bearings from N'gambezi.

Blue hills of Ukoreh ..	305°	Kizzcewah	175°
Lohehgeerah	275	Issesseh (Mecro)	117
M'Gandoo	217	Uganda	40
	Unyoro 11°.		

At Bhammeera, the first march to the south of the Kitangule, the following bearings were given me:—

Uganda and Nyanza ..	44°	Kufro	242°
Koebee	131	Kawanggo	275
Usoga	66	Oosagara	332
Unyoro	11	Uhia	182

At the camp of Loochamoo, a distance of twelve miles from the lake, I had a bearing of it nearly due east of where I stood. Here the general term "Looeroo," used in Karagweh, Uganda, and Unyoro, as well as "Nyanza," is given to it, as well as to the Lutanzige Lake.

Compass Bearings from Loochamo.

Looœro (the lake) ..	86°	Cheyseembee	212°
Uganda	48	Rogœrahs	235
Unyoro	9	Kizzcewah	say 130
Koreh	313	Keewaleh block (right of)	185

In making this march of 14 miles to Loochamoo, the country was flat and the grass ankle-deep in water, the mosquitoes were in myriads, and bit desperately at night, even through a light blanket. In such a country any view of the lake was impossible;

and where villages existed they were surrounded by groves of plantain, obstructing all vision. One ridge of hills, at a distance to our left, came down in a north-west direction.

Upon the 9th of May, having been travelling for four days through bogs, across a low country, and with streams—3 to 5 feet deep—at intervals of 3 and 4 miles, I was glad to reach the high ground of Chango, whence, at an elevation of 500 feet above the lake, I had a clear view of three-fourths of the horizon. This view included the Victoria Nyanza, which gave a sea horizon from 85° to 152°, and was calculated to be 10 miles away. I took a sketch of the lake, and entered all the bearings around me as given by a Waganda, and here they are, without compass variation:—

Compass Bearings from Chango.

	°
Keewootummoo (low ground next the lake)	157
M'werooka (also low ground)	175
M'werooka Bay	126
Uninhabited island (say twenty miles off)	118
Right of Sesseh Island ditto	111
Left of Sesseh (as far as was visible)	75
Uganda (hills)	50
Unyoro, ditto	17
Usagara } hilly horizons	218
Kawangoo }	246
Karagweh district (broken horizon of hills)	214
Tenzeewah's (right of block) or Keewaleh, of 29th April	
Mohia (low swelling hills)	188
Woozoongora (low ground)	173

Chango, where these bearings were taken, is one of the prettiest and best kept spots seen upon the journey. Here the natives call the lake "Nurrowareh," and that part of it at the river Katonga they called "Loocero." They knew the Lutanzige to be in Unyoro, and gave me a bearing upon it. An extract from my journal, dated Chango, states, "From a grassy spur above camp, and not 500 yards away, had a most extensive view of the *dear* lake; every one had gathered on the height, even the lazy Wanyamezi exerted themselves to see the glorious sheet of boundless water, occupying one quarter of the horizon. The island of Sesseh was on our left-front, and, except an uninhabited island, there was no land visible beyond the lake."

My journal of this date gives some interesting particulars regarding the country at the north-east end of the Victoria Nyanza, namely,—Keengo, an Unyamezi fortune-teller and trader in my retinue bound for Uganda, told me that he had accompanied the late King Soona of Uganda in boats, with 200 soldiers, to the country of Umara, east of Uganda and near to the Masai. The expedition was one of aggression and

plunder, but though it had this famous "M'ganga," or fortune-teller, with it, success did not crown their efforts, and the party returned. It has already been mentioned that the Wamara use slings and stones, instead of bows or spears; they wear armlets of iron like the Wagogo. To this story we may add that no such race was ever met with by us: we give full credit to the account, and we also think that it denotes there is a continuous water route from the capital of Uganda to Umara, as laid down in Speke's map, and that Umara fixes the north-east angle of the Victoria Nyanza to be very distant.

At Weenja, where my camp was upon the 10th, 11th, and 12th of May, I note that from a height of 500 feet I could look down upon the country between me and the lake; it was undulating and marked by numerous groves of plantain, indicating the dwellings of the people. It was a very pretty view, with the lake away to my left.

On the 13th of May, after marching across many ridges with marvellously steep sides, but covered with reeds, grass, and trees, our camp pitched at Kyabogo, whence I had an extensive view of the lake and Sesseh island, calculated at five miles' distance. At this place a smart young Uganda officer came up, asking to be shown my sketches, and afterwards escorted me to the top of the hill above the cultivations. Here the polite youth eagerly pointed out to me every place he knew, while I wrote down their bearings. I had taken other bearings of the lake during the day's march. He was giving me a fabulous account of a race living where the sun was just setting, saying that the people were very fierce, and used bows and arrows of extraordinary strength, and talked of "Kassara" as being in that direction, when suddenly another M'Ganda interrupted our conversation by calling on me excitedly to look at the moon. I turned from the setting sun to the east, and saw the moon rising out of the lake, sending her rays upon the placid sea with such glittering effect that all of us who saw it were touched by the same sentiment of admiration. It delighted me to see so beautiful a scene appreciated by the uneducated native of Equatorial Africa, and this shows that those who live in a state of nature are not blind to the beauties in nature.

In order to determine the extent of the Victoria Nyanza at this point, I submitted the following problem to three mathematicians, and add the result:—

On the 13th May, 1862, in lat. 0° 25′ 0″ S. and long. 31° 35′ E. (= 2ʰ 7′ 40″ in time) the sun set and the moon rose about the same instant, as judged by the naked eye; required the moon's bearing at the time of observation.

A.'s reply gives the moon's bearing, without compass bearing .. .. { 20° 19′ from E. to S., 69° 41′ from S. to E.
By compass having 9° 44′ variation .. 59° 57′ from S. to E.

C.'s reply gives bearing of moon's centre, without compass bearing .. .. { 69° 20′ E.
And bearing with variation applied .. 59° 36′ E.

A. states that, "At the given latitude, the distance of the visible horizon, as seen by an eye elevated 500 feet, allowing for refraction, is 29·58 miles. The amount of refraction is a good deal uncertain at the horizon. In some states of the atmosphere the distance seen would be considerably greater."

B. replies that, regarding refraction, "The distance seen from an altitude of 510 to 550 feet might be 38 miles."

C. replies that "The distance of the observer from the horizon of the lake, at the bearing of the moon, would be 27·2 statute miles, or 23·8 geographical miles."

From these calculations we therefore know that from lat. 0° 25′ S. and long. 31° 35′ E. the Lake Victoria Nyanza extends for 27 to 29 miles at least, and in the direction of 59° 47′ from S. to E.

Between the right bank of the Kitangule and 30 miles south latitude we had crossed one noble river, countless streams and marshes, in fact, a gap in the land of fifty miles; but now we entered upon the plateau of the country, cut up into steep hill-spurs pointing to the lake, of which we had extensive views during a distance of 10 miles, when we came to another series of dreary plains covered with slush, mud, and water, or cut up by streams, which were breast high, with firm sand bottoms.

This part of the Lake Region is particularly interesting, as it is upon the Equator, where the River Katonga falls into a great bay of the lake. Here I was told that my wishes would be acceded to, and I should be allowed to proceed to Uganda capital by water; the baggage was carried to the side of the lake and put in a canoe of five-planks, but the water came in in such quantities that we should have been swamped. The project was abandoned, much to the delight of my followers, and we therefore made arrangements to proceed by land.

The blue lake had small surging waves upon its surface, and washed up *débris* of seeds and reeds. The shore was flat to a considerable distance inland, and had generally a fringe of gigantic reeds concealing the view. Katonga Bay did not seem to be deep water; it is horseshoe-shape, 3 miles across and 5 long, and exposed to the south-east; a gentle breeze blew upon it, and there was an island of grass at the north-west end; the valley contracted as it extended out of view to the north-west.

At the ferry of the Katonga, 14 got into a canoe which conveyed us through a passage in papyrus for 200 yards, here we changed into better canoes, and paddled through open water for a mile across the bay. The natives would not allow me to sound, nor to put my hand into the water, but they were full of

fun and raced across in great humour. When within a mile of the shore, reeds and grass appeared, and there was no channel large enough for our canoe, so we jumped into the water, which was 4 feet deep, and commenced plumping and plunging amongst the curious grass (*Pogonatherum sp.?*) which floated like hay upon the lake. This was very exhausting work, for I was weak from illness, and the heat of the sun was great; but fortunately the footing was firm, and my bare feet did not suffer so much as my head.

The three canoes which ferried us were propelled by paddles of solid wood, 4 to 6 feet in length; the men sat upon cross sticks, facing the front, scooped up the water, splashed and raced their neighbour-canoes like a lot of children at play, but they took no liberties, and were perfectly respectful to their charge. The only thing that I objected to particularly was their insisting upon killing the three or four fowls we had as food, before ferrying the river: it seemed so very silly, but they said that we should run the risk of being attacked by hippopotamus in our passage across if the fowls were left alive, this animal having a decided taste for poultry. My chickens were therefore sacrificed, which threw more into the larder than was necessary.

From the Katonga Bay to the head-quarters of Uganda, the distance is 60 miles across hill-spurs, bogs, and streams; there were, say, thirty of these spurs, or ups and downs, which radiated to the lake, and there were the same number of streams and bogs to cross; their depth varied from 1 foot to 7 feet, and a remarkable feature is connected with them that, at this point of our journey, between Congee and Namagoma, the first half of the streams ran into the lake, and, say, the last half of them ran to the north, showing a distinct watershed.

The M'werango and the Moogga Myanja were the largest of those flowing to the north; the former, we were informed, comes not from the lake, but from a rock s.s.w. of Namagoma, and joins the other stream, and forms the Kuffo River seen at Unyoro. The M'werango is 300 to 400 yards across, but its water is entirely concealed by the dense aquatic vegetation growing in it. A passage, the width of three men, has been cut through this, and an attempt at bridging had been made by placing spars of palms, &c., upon forked sticks; but these had been displaced, and delayed the crossing of our traps for one hour. I swam across the last half of this bog. Little or no flow was visible, but the direction to the north was unmistakeable, for the floated logs indicated it. The other large stream, or bog more properly, was the Moogga-Myanza, which also was completely hidden by aquatic vegetation. It was 500 yards across, and a winding passage eight feet wide had been cut in this, form-

ing what might be called a tunnel, for the graceful papyrus met over the passage, forming an arch over-head. Its depth was 5 feet or so, coming up to the breast, and the footing was different from the majority of the bogs; it was of hard sand, quite pleasant to walk over. The Myanza had not much flow visible, but there was enough rippling noise through the rushes to tell that there was a flow to the north. I inquired where the stream came from, and a tradition was mentioned concerning it. It seems that "Moogga" was one of the wives of the late King Soona, of Uganda: she became dropsical and was sent for medical advice to a place south-east of this; the result was that she was delivered of a child, and this river began to flow as a happy omen, and has continued ever since!

Where these rivers have their rise, whether from the hills between the part we crossed and the lake, or whether they are in actual communication with the lake, neither of us observed; our information was from separate sources. But, wherever they rise, their flow is to the north, and there is nothing impossible in their channels being in communication with the Victoria Nyanza; indeed, some natives said they are so. But there is one thing remarkable about the streams we crossed which were flowing towards the lake: their water was brown and their sides were of tenacious black mud, showing that this alluvial had accumulated from a large area, for a long distance, and for ages; whereas, when my party came upon streams which flowed northwards, there was scarcely any mud at their sides, and their footing was of firm white sand, consequently, the leg came out of these streams without the black booting of mud gathered in all the bogs which flowed to the lake; and this clearness of water, with absence of alluvial deposits, indicates to me that their courses must either be very short, or that they may be percolations, or may-be overflows from the Victoria Nyanza. I incline to the belief that they do not flow direct from the lake.

A long circuit had been made by both of us in our journey from Kitangule River to Uganda. We had waded through miles of bog and of swamp, which may be called part of the Great Lake; we had seen the great degradation of soil produced by frequent falls of rain, and that the mud so carried to the lake had formed, not at the mouths of the two great rivers, but between them, at points where there was less motion in the water. The island of Sesseh lies opposite a mainland where there are few or no streams, and extends for forty miles. We might have avoided these swamps by following a route ten miles more to the west, where there may be a watershed, and where, when railways are introduced, no bridging of streams

every mile or two will be necessary; but we were constantly pressing to the lake side, and so had to submit to the inconvenience of swamps and the want of provisions, which would have ceased altogether if we had marched nearer the lake.

Attempts at bridging had been made, but they were of a feeble kind; the logs were generally under water, resting upon a foundation of rush-roots, or they were otherwise displaced, so that, with bare feet, their rough surfaces were more painful to bear than the stubble of the papyrus. Swimming even in shallow muddy water was preferable to walking through it.

Having finished the description of the route to Uganda, some account may be given of the prince who ruled there when we made our visit.

M'tessa is one of forty sons besides many daughters born to the late King Soona, of Uganda, by many wives. His family are said to be a branch from that of Unyoro, and they extend as princes and nomades as far as Kazeh. He is the ninth king, and the names of all the previous kings are known from the fact that their tombs are protected and preserved by the Crown to the present day. In these tombs the lower jaw-bone and the bones of the thighs are deposited. At each new moon the present king has the bones of his father conveyed to him, and a ceremony, lasting two or three days, is gone through upon this occasion.

He is not the eldest son, but was selected by the people, or by his court, for his noble bearing, and as a likely successor to his father. Now he must be about thirty-five years of age, fair for an African, not thick-lipped, but with woolly hair, handsome figure, five feet eight inches in height, and manly in all his pursuits, being fond of boating, shooting, and other sports. He has no knowledge of reading and writing, or of time, but counts by sticks, measures time by seasons, or moons, or by saying that so-and-so would take place when a cow's calf would have calved, or when there would be a grandson or great-grandson. He has a remarkably quick perception, and is naturally finely dispositioned, often showing kindness and mercy to those he rules over, but the existing law of his country obliges him to assume the fierceness of the lion when he has to execute or punish criminals, events of frequent occurrence, and often for very trivial offences. We daily observed three or four men and women being led away to be killed. The mode of execution is by a blow at the back of the head: no burial takes place; the victims are cut up for vultures, which sit languidly upon the trees.

The public of Uganda enjoy the observance of great state at their court, and assemble in hundreds round the royal residence daily. They allow the king as many wives and houses as

he chooses. We saw two or three hundred of his wives. Wishing to make him the greatest king in Africa, they give him authority to punish without trial, and plunder slaves, cattle, crops, boats, &c., for him wherever they can find them. They keep his brothers always in irons—that is to say, the brothers have chains to their legs and arms; but though thus degraded in our eyes, they came so chained to call upon us, and were as happy and merry as any young men could be. They laughed, chatted, amused themselves, and made many inquiries of us in the presence of the king their brother without ceremony or appearance of restraint. This extraordinary custom seems traditional, and prevents their obtaining an ascendency over the sovereign elect; but it does not last long, for when M'tessa finishes his period of probation as Prince Regent, and has been crowned Sovereign, all these young fellows are placed upon a pile and burnt. They showed us the piles of wood upon which they were to be put when the day came, and spoke of it without any indication of fear or of regret. They seemed determined to enjoy life while it lasted, joining their brother in all festivities and all excursions for sport and amusement. Separate houses had been allotted to them and their families—for they were permitted to marry; but they were not often seen within the grounds of the palace.

The dress of the Waganda is the most picturesque seen in Africa. It is made of the bark of a fig-tree, cut in strips, which are carefully prepared, and sewn together into sheets as pliant as a blanket. This robe is tied over the shoulder in a large but neat bow, and its folds fall to the ankles. Over this they wear another robe, made of antelope or goat skins, beautifully sewn together, and well prepared, consisting often of many-coloured skins; or the more common robe is that of a cow. The showier the fur is, the more they admire it. A white skin with black spots is a favourite skin, and the bark cloths most approved of are of a rich maize tint, harmonising remarkably well with the bronze skin of the Waganda.

During a march, the Waganda roll up these fine clothes into a long, tight bundle, and carry it on their heads, leaving their hands free for their spears and shields; the pith shield is tied on to the head during rain, and forms an umbrella. A bandage is worn between the legs on these occasions of undress, or when going across bogs, but on arrival in camp they put on their smartest robes, and strut about with canes in their hands.

The day after I had joined Speke at Uganda, while we were seated in the afternoon writing our journals outside our huts, a mob of people passed our enclosure, and then came bounding through our fence in the most unceremonious manner, and stood

before us. This was the king and his brothers, who came to return my call of the previous day. He was not the puppet of yesterday's durbar, but was dressed like a negro melodist, in a chintz suit bound with red, made by one of our men, to resemble the cut of our clothes. He had evidently expected to be admired, but we only laughed heartily, for the contrast between him and his ragamuffin brothers was too ludicrous. They were somewhat mangy-looking, and wore tattered bark clothes. One boy was heavily ironed and handcuffed, another had imitated our wideawakes, and wore one of leather, others carried guns, rifles, a dove, a dying vulture, a hornbill, all of which we were asked to look at. I rose on their arrival, and offered my iron stool to his majesty, who sat turning over the pages of my journal and sketchbook with as little patience as a monkey. His brothers were round him, shouting with laughter, and hungrily tearing at sticks of sugar-cane. When the books had been examined, he asked to have some gunpowder, though he had got three pounds of it the previous day; next he wished to see the pictures I had made of Rumanika of Karagweh, asked whether he himself had been drawn yet, and finally told me to take my hat off, to show his brothers my head. This over, he suddenly rose and left, ordering Speke to follow; as I was still lame, I could not accompany the party, they went at such a pace, but I strolled after them, and met two more brothers, accompanied by keepers, and heavily ironed, hands and feet. The poor fellows smiled at me, and looked quite happy and well; but, from the weight of their chains, they were unable to walk fast enough to keep up with the king's procession. These young princes were the only persons we saw in irons while in Uganda, and I am inclined to think that this custom is looked upon as a royal privilege. While continuing my walk a number of boys, bearing bundles of reeds, met me, and asked what direction their king had taken, as they wished to join him. They were torch-bearers, and flew after M'tessa, who returned after dark to his residence by the light of these torches and the rattle of his wonderful drums.

Speke returned at dusk, having seen the king amuse himself with shooting, eating, and changing his dress several times from suits carried in a japanned tin case he had got from us. He had not dined, and declined some beef sent him by the king because no plantain wine had accompanied it, and got home without any particular adventure.

The day following this picnic and visit we had many messages that the king must see our sketches at once; also all our guns, with several charges of shot and powder for them. The birds he had shot were brought us, so that they might be painted for

him. All these silly requests were complied with; but our guns sent for his inspection were kept for a few days.

Every day we were pestered by messages such as the above, brought us by impudent young urchins as sharp as needles, who would enter our huts to examine what we had, and then leave with sketches, photographs, pairs of shoes, or anything they saw which might amuse their master. Speke permitted all this, and humoured every whim of the king on purpose to be allowed to navigate the lake, visit the Masai country, and ultimately get away. Also he felt for these young boys; for, if their king's orders were not carried out to the letter, they would have their ears cut off, at least, if they were not killed outright.

The mother of this king was still alive, and had to receive as much attention, and be equally humoured with the son. We constantly called upon her; but she would often affect not to have time to see us, though she kept us for hours in waiting for a reception. We could make no move without her consent. It was proposed that, while Speke was exploring the lake and the Masai country, I should go to Karagweh by water for some things that had been left there; another proposal, coming from the queen, was that Speke should travel to Egypt and back while I remained, as Her Majesty wished Speke to return to her, and to see a little more of me. Offers were made of wives and land if we chose to remain, for neither the king nor his mother wished to part with us; so that the game was a difficult one, requiring wonderful tact and patience.

The queen was a humorous old lady, and asked Speke one day whether he had anything that would cure her of dreaming of her late husband "King Soona." Speke replied, "Yes, he had, but he felt a delicacy in mentioning it." Her Majesty pressed for an answer; and he said this was a common complaint in his own country, widows generally suffered from it, and the remedy was marriage. She laughed heartily at the joke, and no doubt gave him an extra allowance of plantain for his men.

On one occasion Speke held the hand of the king from stabbing one of his favourite women, who offered to assist his Majesty across some water, and he was asked on several occasions by officers of the Court to intercede for their sons, who were condemned to be executed, and his request was generally responded to.

M'tessa had confidence in Speke and his men. While rowing together on the lake, our men rowed the boat in which the king sat. A sketch of this arm of the lake, taken a few miles from the capital, has been called "Murchison Frith," after the late President of this Society, Sir Roderick Murchison.

The mode of living in Uganda is different from that of all the

countries we passed through. Travellers are considered as guests, and the people are bound to give them shelter and food —and to cook their food—without reward. This is a most iniquitous system; the people feel the tax heavily, for they have to entertain the numerous guests who visit their king—the only one who takes any recompense. He accepted from us guns, beads, cloths, and other presents, while his people dared not take such articles. Our men did not like these terms, and became mutinous from want of food; for, unless they risked their lives in plundering, they would have starved, as the allowance of his Majesty for their support was only ten bunches of plantain for sixty men every fifth day. Beef, mutton, and fowls were rare commodities; and the king was loth to part with such, unless to Speke and myself, not Mussulmen, like our followers, who refused the food of animals killed and cooked by Waganda.

Plantain wine of excellent quality is made here, by putting the juice of the fruit into canoes, or rather long troughs of wood, having a longitudinal slit, and allowing it to remain for three days. The opening is closed by plantain-leaves, covered over with litter and earth, to prevent any great fermentation. On the fourth day it is removed in large gourds to the houses of the wine-makers, who drink it during their meals, or when paying visits, in the same way as practised in Abyssinia with honey-wine. I should have mentioned that the flour of parched grain must be added to the plantain-juice to assist its slight fermentation, and that, when clear and sparkling, it is a delightful beverage.

The climate of Uganda is decidedly relaxing, being humid from the misty showers which fall almost daily, and from its proximity to so large a surface of water as the lake. During June the daily fall was not sufficient to measure in a gauge, but every morning the valleys were veiled over by a thick mist, caused by the condensation of the air, and it very often happened that the sun was invisible all day from the thickness of the atmosphere. On awaking each morning in Uganda, my eyes were partially sealed, as if with gum, but whether this was from weakness or from the moist atmosphere I cannot say. We had one thunderstorm during June; and it created rather a sensation, for one of the houses of the king was set on fire by lightning. Rain and hail accompanied it.

The vegetation in such a country was gigantic upon the higher grounds, where dense thickets of reeds, ten feet high, grew naturally upon the soil of red clay. The staff of life in Uganda—the plantain—grew in profuse quantities upon the faces of the hills, covering them with its leaves, which waved with the breeze. In the valleys and deep dells, by the lake

side, the vegetation of trees, creepers and aquatic plants was lofty and luxuriant, though not so tropical, as to ferns and orchids, as was expected. However, much has still to be explored in this respect.

Mean temp. in June	..	..	..	..	..	69·2
Extreme heat ditto	..	..	..	..	..	79
Extreme cold ditto	..	..	..	..	..	60
Fall of rain ditto	..	..	..	..	..	0·55
Prevalent wind ditto	..	..	..	..	..	S.E.

EVIDENCE AS TO THE EXTENT OF VICTORIA NYANZA.—Now that we have traversed the western and northern sides of the Victoria Nyanza Lake, it may be as well to give, in a concise form, the personal evidence and the native authority we have for its extent, and to offer some remarks upon Mr. Wakefield's routes in Central Africa.

Personal Observations.—The most southern point of the lake was determined by latitude and longitude, at Muanza, in 1858, by Speke, who took the altitude, making it 3740 feet, with the same instrument which determined the altitude of Lake Tanganika, namely, by a bath thermometer; his boiling one having been broken in 1857, as stated by him in vol. xxviii. p. 244, of the 'Journal of the Royal Geographical Society.'

The most northern and western points upon the shores of the lake were fixed by latitudes and longitudes, and bearings taken by Speke, and a few by myself, in 1862.

We thus have a triangulation fixed astronomically, about which there never can be a doubt, and we have other intermediate points of vision on the lake, as stated in the following extracts:—

EXTRACTS FROM SPEKE'S WORK, 'THE DISCOVERY OF THE SOURCE OF THE NILE.'

Page 214. "Karagweh, November, 1861. Travellers conceived the Victoria Nyanza would take a whole month for a canoe to cross it; they thought the Luta-nzige might be crossed in a week."

Page 265. "Ngambezi, 18th January, 1862. To the right, at the end of the spur, stretching as far as the eye could reach towards the Nyanza, was a rich, well wooded, swampy plain, containing large open patches of water, which not many years since, I was assured, were navigable for miles, but now, like the Urigi lake, were drying up Indeed it appeared to me as if the Nyanza must have once washed the foot of these hills, but had since shrunk away from its original margin."

Page 272. "Mashonde, 28th January, 1862. Once across, we sought for and put up in a village beneath a small hill, from the top of which I saw the Victoria Nyanza for the first time in this march."

Page 273. "Meruka, 31th January, 1862. After crossing more of those abominable rush-drains, whilst in sight of the Victoria Nyanza, we ascended the most beautiful hills, covered with verdure of all descriptions."

Page 276. "Ugonzi, 5th and Kituntu, 6th February, 1862. After crossing many more hills and miry bottoms, constantly coming in view of the lake, we reached Ugonzi, and after another march of the same description, came to Kituntu."

Page 276. "Kituntu, 7th February, 1862. I became now quite puzzled whilst thinking which was the finest spot I had seen in Uddu, so many were exceedingly beautiful; but I think I gave preference to this, both for its own immediate neighbourhood and the long range of view it afforded of Uganda proper, the lake, and the large island or group of islands, called Sésé, where the King of Uganda keeps one of his fleets of boats."

Page 281. "Nyama goma, 15th February, 1862. When this was concluded, I went with Nasib up a hill, from which we could see the lake on one side, and on the other a large range of huts said to belong," &c.

Page 302. "Uganda capital, 26th February, 1862. A discussion which ended by the king promising to send an officer by water to Kitangule." (This is quoted in proof of there existing a water route from the capital of Uganda to the river Kitangule-Kagæra, near Karagweh.) Also at page 317. "On reaching home I found Maribu a M'kungu, with a gang of men sent by M'tessa to fetch Grant from Kitangule by water."

Page 392. "Cowes, 23rd April, 1862. The whole of the scenery, hill, dale and lake, was extremely beautiful. The Wanguana in my escort, compared the view to their own beautiful Poani (coast); but, in my opinion, it far surpassed anything I ever saw, either from the sea or from the coast of Zanzibar."

Page 392. "Cowes, 24th April, 1862. Now for the lake.——The beautiful waters are reached, a picture of the Rio scenery, barring that of the higher mountains in the background, which are here represented by the most beautiful little hills.——The king——whilst I sat in the same boat with him, ——to approach the hippopotami. But the waters were too large and the animals too shy," &c.

Page 396. "Cowes, 25–29 April, 1862. We went boating as usual all day long, sometimes after hippopotami, at others racing up and down the lake." Page 399. "First up the creek and then down nearly to the broad waters of the lake." "There was a passage this way, it was said, leading up to Usoga, but very circuitous, on account of reefs and shoals, and on the way the Kitiri island was passed; but no other Kitiri was known to the Waganda, though boats sometimes went coasting down the western side of the lake to Ukéréwé. The largest island on the lake is Sesé, off the mouth of the Katonga river," &c.

Page 428. "Uganda, 5th June, 1862. We met Murondo who had once travelled to the Masai frontier. He said it would take a month to go in boats from Kira, the most easterly district in Uganda, to Masai, where there is another N'yanza, joined by a strait to the big Nyanza, which King M'tessa's boats frequent for salt; but the same distance could be accomplished in four days over land and three days afterwards by boat."

Page 434. "Uganda, 18th June, 1862. I then begged he would allow me, whilst his men were absent at Unyoro, to go to the Masai country, and see the salt lake at the north-east corner of the Nyanza, and to lend me some of his boats for Grant to fetch powder and beads from Karagweh. This important arrangement being conceded," &c.

Page 437. "Uganda, 26th June, 1862. This morning we had the assuring intelligence from Kaddu that he had received orders to hold himself in readiness for a voyage to Karagué, in twenty boats with Grant, but the date of departure was not fixed. The passage was expected to be rough, as the water off the mouth of the Kitangule-Kagæra (river) always runs high, so that no boats can go there except by night, when the winds subside, and are replaced by the calms of night."

Page 440. "Uganda, 29th June, 1862. K'yengo proposed my going by boat to Unyoro, following down the Nile."

Page 467. "Ripon Falls, 28th July, 1862. The expedition had now performed its functions. I saw that old father Nile without any doubt rises in the Victoria Nyanza, and, as I had foretold, that lake is the great source of the holy river which cradled the first expounder of our religious belief. I mourned however when I thought how much I had lost by the delays in the journey, having deprived me of the pleasure of going to look at the north-east corner of the Nyanza, &c. But I felt I ought to be content with what I had been spared to accomplish, for I had seen full half of the lake, and had information given me of the other half, by means of which I knew all about the lake, as far, at least, as the chief objects of geographical importance were concerned."

The lake was seen by me in the same way, but from different views, as we each travelled alone from Karagweh to Uganda; and I made sketches, and bearings, and notes of sea-horizons, all of which exist. All the hill-spurs, the countless streams upon the west and north-west of the lake, and the two large rivers Kitangule-Kagæra and the Katonga, point to, and run towards, one great centre, namely, the Victoria Nyanza; and the body of water thus accumulated was seen to escape from the lake by the river "Nile," at Ripon Falls, and was traced down the northern slope of Africa to the Mediterranean Sea.

Native Testimony.—The Arabs, Snay, Moossah, &c., of Unyanyembe, told Speke of a great ocean = Bahr, far greater than the Tanganika Lake, and probably the source of the Jub River, which was in a northerly direction from them. They never spoke of there being *more* than one lake, and knew that it extended to Uganda.

Joomah, a trader, had sailed from Muanza towards the mouth of the Kintangule River, and he assured me that M'tessa, the king of Uganda, would send his boats for me to the mouth of the Kitangule. This voyage would take two months.

The natives of Karagweh said we might go by water from the Kitangule-Kagæra to Uganda, and that the previous king of Uganda had been on a hunting tour by water to Kitangule River: they all spoke of its vast extent. The king of Uganda, in 1871, sent messengers to the Sultan of Zanzibar, requesting that builders of ships might be sent him to navigate his inland sea. So wrote Dr. Kirk to me.

The Waganda people told us that they navigate the lake to the east for one month, then pass through a strait, probably the M'tanganika of Mr. Wakefield's routes, and enter another "Nyanza," where they procure salt (*vide* p. 428 of Speke).

None of the natives living upon the shores of the lake, or away from the shores, could tell how far the lake extended, or who lived upon its eastern shore. Neither they, nor any one else, had ever crossed the lake one way or other.

Captain Speke's map in the 'Journal' of the Society, was constructed by him entirely from astronomical observations, from bearings, and from information sifted on the spot. I have the utmost reliance on his integrity and judgment, believing him to have been as honest in all his purposes as it is possible for any man to be, and I look upon his map as a correct rough delineation of the countries we saw and heard of; capes, promontories, and minor details, have been left for the surveyor to fill in.

Besides these evidences of the extent of the Victoria Nyanza, we know that there is but one land route from Unyanyembe to Uganda, namely, all round the west side of the lake. We never heard of any one dwelling in the portion of the globe where Speke has placed the Victoria Nyanza. We never heard of islands being far away in the centre of the lake, nor of people sailing from any such islands, and therefore we concluded there can be none beyond those we saw near shore. Looking across the lake we never saw any land, peaks, or mountains, neither did we hear of any. It was also clear to us that between Muanza and the Ripon Falls there is but one expanse of water, for the country upon the west of the lake is strikingly level.

NOTES ON MR. WAKEFIELD'S ROUTES IN CENTRAL AFRICA.*—Regarding the country to the east of the Victoria Nyanza, the natives living upon the south of the lake have visited it so rarely that the information which I obtained regarding it was scanty. Geographers will welcome this list of routes obtained by Mr. Wakefield from "Sadi," who had penetrated various new regions.

The chief interest to me in this route-list of Sadi, lies in the recognition of many of the names applied to the stages, but I have been unable to connect his districts and races with any countries or races we ever heard of.

The native names are of two classes, those familiar to East African language speakers, and those which belong to a more northern—almost Abyssinian dialect. Of these two classes there are equal numbers, and in examining the east-coast language, I am of opinion that the names are not those applied by the inhabitants of the country, but they are given to the country by the traders from the east coast—a confusing system to a map maker. For instance, in the route taken by "Speke and Grant" we were quite familiar with Sadi's names to camps, such as Tanga, M'to, Kundu, Kisiwani, Mikindumi, Mikuyuni, Kisongo, Kitumbi, Ngoroinne, M'buyuni, Vibokoni, M'kwajuni, M'swakini, Ziwa-la-M'bu, Fau (called Faroo, Rhinoceros on our route), Wa Suku, &c. &c., because they are the Kisuahili names of well-known fruits, colours, feet, trees, teeth-scrubbers, animals &c. &c., and refer to natural objects, peculiar to the spot where Sadi's caravan encamped.

Mr. Keith Johnston states at page 333 that "not one single name of district, people, or place, given in the new routes, has any such remote resemblance to names, reported by Speke and Burton, as to warrant an identification with any one of these." This is perfectly correct so far as the actual names of the country are concerned, and also so far as the district and race names, that

* *Vide* 'Journal of the Royal Geographical Society,' Vol. xl. p. 303.

they are all totally different from anything we met with; but not so with the above names or camps, given in Sadi's route, for they are familiar to every Kisuahili scholar, and should be weeded from what may be geographical districts.

Sadi states that he is unacquainted with the form "Nyanza" and calls the lake "Nyanja." The natives of Uganda pronounce the word Nyanza with a z, other races with a j, others with an s, and I myself have no doubt that Nyanza, Nyanja and Nyassa are one and the same word, for they all signify lake, and the spelling of them is a matter of taste. The word Loeroo—probably Dr. Livingstone's word Moero—is also applied to lake or a silvery sheet of water; we heard it used for the Urigi, the Karagweh, the Uganda and the Unyoro (Luta-nzige) lakes, Loo, Moo, and Roo being synonymous, and applied as a prefix to flowing water.

The name Bahar ya Ukara evidently means the sea of Ukereweh, or, "the sea with the island," Kirwee, Kirwa and Keera, being the native names for an island at Nyassa and Victoria Nyanza, and it implies the south-eastern side of the Victoria Nyanza.

Bahr ya Pili—in Mr. Wakefield's map—literally the "second sea." This is the usual natural form of expression adopted by those east-coast sea-board people, who call the ocean Bahr, and who, on visiting an inland, fresh-water sea like the Victoria Nyanza, would, from its extent, name it the "second sea." The Unyanyembe Arabs applied the same term of Bahr (=ocean) to the Victoria Nyanza and spoke of Bahr Usoga, Bahr Misr, Babr-ingo. Mr. Keith Johnston thinks that we must look for a "first sea" near the "second," for Baringo to be the first sea and Victoria Nyanza the second; but this would be inconsistent with the native mode of expression; the native knows but one ocean, and anything resembling it he immediately calls a second sea, as Bahr ya Pili. If it were accepted that the first sea visited would get the first name and the second the second, then we might have either the one or the other sea coming first, according to which came first upon the route.

At page 310 Sadi states that he had travelled for sixty days (marches) along the shore of the Victoria Nyanza, without perceiving any signs of its termination "neither had the natives with whom he had conversed, been able to give him any information about its southern or northern limit." As Sadi had not been to the most northern or most southern point of the lake, and as the route-list has no bearings in figures, I think his "sixty marches," say of six miles daily, equal three hundred and sixty miles, must be exaggerated by at least one degree, for he has made the lake larger (by this amount) on the east side than it is on the west. I can quite conceive that, most probably, no people on the eastern shore of the lake, could tell him its extent, for they have no means of making the journey by water and the different races are so non-international that they have little communication. The case is very different on the west shore of the lake where a trading route has existed for upwards of twenty years to Arabs, and hundreds of caravans have traversed it up and down, whereas the races upon the east side of the lake are notoriously inhospitable, no trade may exist there; the region is one of salt lakes without the fine rivers of the west shore, and for these reasons it is an unfrequented almost unknown region to the Arab community of Central Equatorial Africa.

With regard to the width of the lake, "Sadi was informed that it required six full days—from sunrise till sunset—to cross it in canoes, but that, if the men went right on, *day and night*, the journey was accomplished in *three* days." Page 310.

We made many inquiries, but never could hear of any one having ventured across the lake. The canoes were mere hollow logs or planks (five) sown together, quite unfit for anything beyond coasting or ferrying; I speak of the best canoes we saw—those of Uganda. No native of the interior would ever

risk his life or property in such a venture, they would never move out of sight of land, compasses are unknown to them, and, referring to the statement, that it *was* accomplished by proceeding *day and night* for three days, my experience is that no African born would attempt the passage in canoes by day and far less by night. Sadi was probably calculating what *might* be done in a proper boat or ship, and gave his opinion to Mr. Wakefield. The average width of the lake laid down by Speke, from Arab information, is somewhat the same as stated by Sadi, namely so many days in a boat, or say fully two degrees of latitude, and, till this is checked by actual inspection, it may be accepted as tolerably close to the truth.

Sadi "could descry nothing of land in a westerly direction except the very faint outline of the summit of a mountain, far, far away on the horizon." Page 310.

The exception made of the "summit of a mountain," is, as far as we observed, an impossibility, for there are no detached mountains or high summits along either the west or north side of the lake; there are hills of course, but all are of uniform, almost level, height, without any conspicuous cones, and averaging five to eight hundred feet above the level of the lake. However, it may be possible, though improbable, that, as Mr. Keith Johnston states, Sadi saw a high island in the middle of the lake; we will not deny it, but we neither saw nor heard of its existence.

The statement that the lake has a daily tide is a delusion, though it is quite true that its shores have "drifted foam" and other light matter of spongy vegetable materials, in quantities cast up in line upon the beach; all lakes of any extent show this kind of beach wherever they may have flat shores and shallow water. To the eye of an uneducated native this would be very likely to convey the idea of the shores of an ocean. The small rippling waves flowing in like breakers, even upon a calm day, would also make Sadi imagine the lake to have a tide, but no such exists in the Victoria Nyanza.

I am only able to account for Sadi's story regarding the "three-masted ship" with "white sails and bowsprit", having visited the lake "eight or nine years ago" (now ten to twelve), page 310, in this way, namely, it is the same account we heard before reaching the lake. We found that the report referred to the boats upon the Nile at Gondokoro, in 5° N. latitude, but, there was this difference that none of the Nile boats have three masts, and none of the Nile boats can possibly navigate up to the Victoria Nyanza, from the number of waterfalls upon the Nile, south of Gondokoro. Sadi's three-masted boat must have been built on the shores of the lake and query, by whom? We never heard of any such boat; neither has any been built there since then, and I believe Sadi was misinformed. The channel he saw is common upon the shores of the lake, it is made by the natives for their canoes and indicates shallow water with vegetation.

In commencing these notes upon Mr. Wakefield's paper, it was remarked that two distinct forms of language were observable. One, the familiar patois of Eastern Africa, and the other from Kikwari, a strange dialect, in which only a name or two have been recognized. The words "Erok" and "nyarus" sound the same as the Unyoro language, and it may be remarked of Nyarus, that it sounds Unyoro corrupted, for the country is as often called Unyaro as otherwise, in fact, at Madi where the dialect is very broad, it is always pronounced Unyaro. Nyaro and Unyaro sound the same and if we could account for the s in Unyaros, we should have Nyarus, the name of the river of Mr. Wakefield's map made to flow into and out of Baringo lake, but I am unable to make the Nile out of it, though the words appear to be the same. The people who live upon its banks are similar also in their habits to the Wanyoro.

Some remarks may be made upon the people said by Sadi to dwell to the

east of the Victoria Nyanza, comparing their habits with those we passed through, in order to mark any affinity.

I. The Wa Ukara. From their proximity to the island of Ukereweh and from their arms, implements and language, they might be any of the races in Umyamezi (the country of the moon), except that their women wear kilts of skin not long enough for decency, and their huts are built of mud and wattle—both of which denote a different race to the Wanyamezi.

II. The Wa Daicho. A name we never heard mentioned. In respect of their using spears and shields, bows and arrows, calico, &c.; no race can be determined, unless the length, shape and make of their spears be minutely described; the same with the shape of the skins their women and men wear, and the same with their caste marks. One thing makes them very peculiar: not keeping fowls, having fine sheep, and sugar. They must live upon a route frequented by traders, as calico is used by them.

III. The Wa Sumburu. I do not remember this name either. They are a people entirely different, judging from Mr. Wakefield's account, in their mode of life from any we ever met with, excepting the Wahuma, the Nomads of Karagweh, who, like the Wasumburu, do not eat fish, keep immense herds of cattle and never till the ground themselves. This race resemble the Hamaran Arabs of Baker, who are dexterous horsemen and hunters, keeping camels and horses like the Somali.

IV. People of Baringo. I am unable to accept the derivation given of this word, namely canoe. Bahr = ocean, is distinctly indicated. Ngo, the termination, puzzles me, but I conceive it to be the same as the termination in Kilimangao = the Shield-like hill, or the hill resembling a bare shield with a high boss in its centre, for we know that the cone or cones of this mountain rise 14,000 feet majestically from the surrounding country, thereby resembling the native shield. I therefore conclude that the Baringo lake, with its island, not being so distant from Kilimangao, has been likened by native travellers to a shield with its boss and called Bar-ngao, the shield-like sea, a sheet of water with an island rising from its centre. Joomah, whom I met at Karagweh, and who was a native of Mombas, always spoke of this mountain as Kilimangao, and not as Kilimanjaro. Speke says the derivation of Baringo may be a corruption of Bahr (sea of) Ingo.

V. Wa Suku. Mr. Wakefield tells us the people dwelling in the north of Baringo, are called by this name, which sounds the same as the name given generally to the "north" Usukuma by east-coast and Wanyamezi people. We never heard of the name being applied to any particular race, and the name of their country "Lugume" or "Suku Lugume" sounds very like what the natives would call a "northern swamp," and we are told by him that it is by the lake, or the banks of an ample river and not in a mountainous country.

VI. Wa Ligeyo "live on the western side of the Baringo lake, &c." The nearest approach we met with to this name is the Walegga, a race who visit Unyoro from beyond the Luta-nzige lake, but I cannot believe the two races to be identical. The Walegga we saw had all their lower incisors and (?) their lower canines extracted, they cauterized their foreheads, and their arms were marked in front by short, straight, horizontal blisters or cuts.

VII. Wa n'jernsi = "Nyarus people." I have already mentioned that Nyarus may only be a corruption of Wanyoros, and it is a curious similarity in the two races—if they are distinct—that they both have plantations, herds of cattle, live on either side of a river, they prepare and preserve fish by splitting them up and drying them in the sun, and, which is also remarkable, they both take refuge in islands or inaccessible parts of the river when attacked. But without more material and the bearings in figures of the route traversed by Sadi, it is needless to make further speculations.

IV.—UGANDA TO GONDOKORO.

After receiving permission to leave for the north from the king of Uganda, we determined to visit the outlet of the lake, even without his consent, whenever the opportunity should offer. Accordingly, having proceeded three stages over spurs of low hills with bogs flowing eastwards, our party divided. Speke with ten men went to visit the exit of the Nile from the Victoria Nyanza, while I, still unable to walk far, proceeded north, making my way into Unyoro, where he was to join me by sailing down the Nile.

He reached the Nile at Urondogani, traced it up to the Ripon Falls, where the river leaves the lake from a frith similar to that nearer the Uganda capital, and called "Murchison Frith." All view of the lake was obstructed by a low line of hills which enclosed this frith or bay, but Captain Speke described it as a wild scene altogether. At the falls, hippopotami and crocodiles swam lazily in the river, and fish jumped up at the falls, where men were collected spearing them. The width of the river here at the Ripon Falls, where it leaves the lake, was 150 yards.

Having made some sketches, collections of the fish, shells and animals, and taken the altitude, 3308 (?), he descended the river with the intention of joining me by water at Unyoro; but he was not permitted to do so: as he had not obtained the sanction of the Wanyoro authorities, the natives attacked his boats, and prevented his further progress. He therefore joined me by land, where I also had a reverse, for the Wanyoro told me that there was no permission to travel through their country; and I had to retrace my steps also. We deliberated as to the course to be pursued, and determined that, if we could not get down the Nile, we should get a thousand men from the king of Uganda, and promise him 100 loads of gunpowder, 100 of lead, 100 of beads, and 100 of cloths, in exchange, and so force our way through the Masai country, passing Kilimangao, down to the east coast.

Happily for us this was not necessary, for, now that our camps were united, the Unyoro people had less suspicion of us; and, to our great joy, we were permitted to proceed northwards by slow stages.

After leaving the capital of Uganda, for three marches to its north, the country is one continual up and down, over low hills of a uniform height, and through streams and bogs. Eight of the latter were crossed during the first march. As we proceeded, this kind of country subsided into wide and low undulations, into waving plains, and, ultimately, at Unyoro, we had flat country,—seldom were detached or solitary hills visible.

Between the two capitals of Uganda and Unyoro—a distance of 80 miles—we crossed thirty to forty streams, burns and bogs, wading the whole of them. Two of the bogs were four and six hundred yards wide, and loin-deep; others were mere dips in the country; and at several places water was scarce, having to be obtained for cattle by digging wells. Generally speaking, the water was white and muddy.

The soil was chiefly red clay, which the people of Unyoro use in making the partitions to the houses. In Uganda, the tall reed was used for this purpose; but there were none of these in Unyoro: all the rain that fell was supported by the soil, and on digging a two-feet-deep hole, no water had gone through, and the soil was dry, hard, black, cold, and lifeless in colour, containing 40 to 70 per cent. of clay. The paths, where vegetation had been worn away, were covered with white sand.

The wild vegetation was chiefly of grass, three to four feet high; the Uganda reed had disappeared, and a broad-leaved cane, *Saccharum sp.*, also a grass with the head of our oat—a species of *Panicum*—had taken its place. Cattle, sometimes met with in hundreds, grazed over the undulations, which were dotted with acacias, cacti, wild vines, and a few palms; or wild animals, such as antelope, buffalo, zebra, elephant—of which we met with one to two hundred in a herd—grazed in higher pasture and more dense forest, sufficiently tall to hide the smaller of these animals.

Cultivated ground was remarkably rare, the country being chiefly used for grazing cattle; but, where seen, the crops grown were sweet potato, sesamum, pulses, Indian corn, and plantain.

At the capital of Unyoro—the king of which is a demure, undemonstrative, sullen fellow, named Kamarasi—the country is flat and treeless, with a few hills in the horizon. The River Kuffo—formerly in Uganda the "M'werango" and "Moogga Myanza"—flows sluggishly through the plain, in a channel similar to a sunken canal; but in the month of November it was in high flood, tearing down the vegetation of the season in its course, and carrying away landslips bodily—rushes, bushes, and all. This river joins the Nile below Unyoro capital.

The king arranged that we should leave by water, descending the Kuffo without demonstration, so that his people should not be aware of our departure, for he imagined that when we were gone he would be left without protection, but he was mistaken.

We left on the 9th of November, with feelings of unmingled delight at getting away from this inhospitable province. My impatience was great, and I could not help getting angry at our men for taking so long to pack up and be off. As we moved down the Kuffo River, one bank was lined with several

hundred people, one of whom was distinguished as the woman who attended the king during levees, where she sat at his feet. We took a good look at her, and saw she was very plain and flat-featured, with bare head, the wool being combed up in the shape of a cock's comb from the neck to the forehead; the sides of the head were shaved. Her dress was a yellow bark-cloth, striped with black. We shouted good-byes, and waved to the crowds, who returned these salutes very warmly, some of them shouting and running in pace with our canoe along the bank; altogether it was a gala day, for us particularly, though also one for them, for we left Unyoro amidst great demonstrations, and with the hearty good wishes of the king and his followers.

We shot down the Kuffo at the rate of four miles an hour, with four paddlers; but this pace was not continuous—a few rapid strokes were made and then none at all. But we enjoyed it excessively; the stream was broad enough for two ships' "gigs" to have raced abreast; the sides were a sea of tall reeds and papyrus, so that no view could be obtained beyond them, except the occasional top of a tree indicating land.

Having descended a few miles—judging the river to be 150 yards wide—we found it became suddenly lake-like, and this made us look for another river; but our horizon was a complete circle of vegetation, and without a guide it would have been a puzzling predicament. No current was visible now, and in this uncertainty we paddled for an hour; the water in the centre being white, like the Nile water generally, and the sides of a clear brown colour.

On cross-questioning our pilot, we found that we had, imperceptibly to us, reached the Nile, for the boatmen said we had only to ascend the water we were in and we should reach the Victoria Nyanza. In breadth it measured 1000 yards; once, indeed, we had almost a sea horizon. At places where the current tried to make its way amongst myriads of papyrus islands which had stuck in the channel, the surface of the water was much troubled; but where these floating islands had become free, the water had an appearance of stillness, and the islands moved down stream at half a mile per hour.

Some of these floating landslips, which moved down stream in slow circles, were 20 yards in length, covered with bushes 15 feet high, and a dense under-vegetation. On the day we saw so many, a violent wind blew up-stream, making the foliage in the islands bend to the breeze and appear like rakish-rigged vessels in a storm. In addition to this, hippopotami kept popping up amongst the breakers on the surface of the water, and gave a charming wildness to the scene.

Our boatmen were annoying, for they would not keep upon

the proper course, but went plundering fish at all the traps which were set, or they chased all stray canoes to plunder them. They did not understand our interfering to prevent stealing, and went ashore whenever it suited them. However, at sunset they were always welcome to land, that we might sleep on shore; the landings were generally a channel cut through reeds and rushes for 150 yards. At one of these landings we observed the largest canoe ever seen upon the Nile,—a huge timber, lying water-logged: it was looked on with veneration, for our boatmen sprinkled water over it, and were pleased at our showing the same respect.

The vegetation observed upon a hunting island of considerable extent, belonging to Unyoro and Ukidi, was remarkably tropical, as seen from our canoe on the 10th November. Water-lilies, papyrus, and sword-rush grew in and out of the water, each plant beautiful in itself; amongst these were the curious pith-tree, 30 feet high, covered with yellow flowers larger than its leaves, and quantities of variegated convolvuli. The bank of the island rose abruptly for forty feet, and was covered with trees netted over and drooping from the profusion of cacti, convolvuli, scarlet umbels, mistletoe, showing every contrast of colour—green and orange, scarlet, blue, mauve and yellow; but the strangest effect was produced by the cacti, which grew upon the tops of the trees, standing up like stubble in a field.

For four days we travelled in canoes along the stream of the Nile, which maintained its width of one thousand yards and its current of one mile per hour; the banks varied from abrupt to flat, and the floating islands got smaller in size from their perpetually circling like tubs in a pond; occasionally they were seen breaking up in the water, like a flake of snow.

The glare of the sun from the water, the heat and exposure of these few days of paddling, began to tell upon both of us: we suffered from sick-headaches, and at the tenth day from the start of our water-journey, I was struck with severe fever and vomiting, my limbs felt powerless, and I could get no rest at night. The few Zanzibar men (fourteen of them) who had not deserted from us enjoyed the water-route very much, assisting in rowing, splashing, or laughing, and occasionally enjoying the fun of a chase and capture of some stray canoes. This has been already alluded to,—that we permitted the fun, but prohibited all plunder.

We constantly took soundings, and ascertained the depth to be very uniform. In the centre of the stream it measured 18 feet, but, at canoe's length from the side, the smallest measured depth was 9 feet. The river had a firm bottom of sand in its centre, and a soft muddy bottom at its sides.

At 2° N. lat., just above the double-coned hill of "Kikoon-

gooroo," meaning "near the water you get fever," the river gets narrower, 600 yards wide, and abreast of this hill the stream is driven off its regular course and flows to the left, making a majestic sweep, and striking upon high land with many dwellings. This hill, and all the right bank, is here densely wooded and very pretty; it stands 600 to 800 feet above the river's edge. We had seen hippopotami in the river daily, and when resting in the villages on the left bank, every night observed that the people keep apparatus of spears, tackles, and floats for capturing them.

Descending the Nile from "Kikoongooroo" Hill, the river changes from 600 to a minimum width of 200 yards, and its depth is now less, being 9 and 15 feet deep at its edges and centre. The flow was but half a mile an hour, and the bends more frequent, since its width has been narrowed by a more hilly country, though reaches of 2 and 3 miles are still met with. The water was of a darker colour, having been cleared of much sediment; and on the occasion of a storm of wind and rain from the north on the 16th November, 1862, from having the appearance of a sheet of glass, its surface was broken up by a series of breakers and "white horses" running up stream. Later in the day this storm returned to us from the south,—the opposite direction.

Hence, say 2° 10′ N. lat., below Koki, in Chopeh district, the river begins to pass over barriers of rock, the strata of which cross the river, so that boating was impracticable; and we proceeded, after attempting a canoe-journey, for 20 miles by land through an undulating forest-country, with habitations every mile or so, and four to five bogs at the middle part of the journey. This, the left bank of the Nile, was unusually populous, and had immense fields of the sesamum or oil-producing grain, which was about to ripen (19th November).

Arriving at the falls of Karuma, from a height of 100 feet I looked down upon a cataract in the Nile: after passing through the dreary wastes and bogs of Unyoro, this was a cheering and noble sight. The opposite bank sloped away from the river, and was rocky and densely wooded. The dark black water, agitated into violence and floating foam from having passed down a narrow fall, eddied, swirling about like one of our wildest Scottish rivers; but a better idea of this spot was had by sitting on the rocks by the side of the fall. The whole stream of the Nile poured down through three sluices of rock, and then dashed upon islands till its force was exhausted, then it became comparatively still at the point where we were to ferry it—the Karuma Ferry—and proceeded onwards on a new course, to the west.

This cataract is but one of many upon the Nile about this lati-

tude; for above this we observed two others, and below it we heard the rumbling sound of one which must be much larger. But it was not advisable, we were told, to see it, as the Wakidi and the rebel brother of Kamarasi lived not far away. In the entire course of the Nile there is not a more picturesque part than this—the grand river tumbling over rocks, the beautiful wooded banks, the deep channel through which it passes, all are wild to a degree, and we inclined to linger by its course.

Here we had to wait for a day or two before crossing to the opposite bank, and we fished the river or watched the traps set for hippopotami; at last, however, we ordered our twenty cattle to be crossed over before ourselves. African like, this plan was reversed, and we crossed in the first canoe. It was nervous work, for the river was of great depth; it boiled as large streams do, and the canoe had a hole in it, stopped up with a sod. Three paddlers worked hard with swift strokes, and took us safely across the 100 yards, and we alighted upon rocks shaded by trees. Here we boiled for the altitude with two thermometers, the result of which was doubtful, namely 2970 ? made afterwards 3996 feet by Sir Samuel Baker.

At this spot the natives sacrificed a goat by splitting it up and placing it upon the path, the head to the north; and Speke was asked to step across it: another had been killed in the same way upon the left bank, for the same object of making our journey propitious.

Late in the afternoon, having ferried the river, we were told that our cattle could not be crossed unless we made some additional present; some beef must be eaten before the risk is run: a cow settled the matter, and the business proceeded. Four were led across at one time by ropes fastened to the canoe; the rope was tied round the lower jaw of the hornless ones, and round the horns of the horned. One only broke loose, but it was picked up before reaching the next cataract; and when all was over, we felt thankful, as the current was dangerous.

After the fatigue and continued anxiety of the day—for we were anxious about our provisions for the journey north, and because we now had entered an enemy's country—we were doomed to be disturbed in our rest at night in the wild forest. A violent burst of thunder and lightning with strong wind threatened to root up the trees under which we camped, and rain fell in torrents (23rd November), soaking everything. In the midst of the din, some voices called out that our precious cattle had strayed, but happily they were recovered; we spent a wakeful night, shivering in the cold under wet blankets and listening to the creaking of the trees and the sounds of wild

animals, but next day by noon our guides arrived, our things were partially dried, and we were off on the march all merry again.

Taking leave of all the men of Unyoro who had kindly escorted us thus far, after they had performed a war dance in our honour, we placed ourselves in charge of Chopeh guides, who were to introduce us to the next chief upon the route, namely, to the old Sultan of Gani, a small province 150 miles from Gondokoro.

At Karuma Falls we had seen the Nile change its course from a northerly to a westerly direction, flowing down through wild scenery,—amongst rocks, ravines, rapids and reaches, the banks reminding me of the varied foliage on our river-banks of Scotland; while the pure waters, plunging amongst these rocks, passed rapidly on to the Albert Nyanza, where they were again to become polluted and made white by the swamps of that region. With such varied aspect of country we found a rich flora during November; and the three following months, when we were in Gani, a district of woods and rocky rivulets, we made a considerable addition to our collection of new plants.

When at the capitals of Karagweh, Uganda, and Unyoro, from native information, we had laid down the position and extent of the Albert Nyanza; and so accurate was this, that when Sir Samuel Baker visited it, he found that the map we had given him was within a few miles of being correct at the most northerly point he reached; but whether our southern outline be correct remains to be proved, for hitherto no one has explored it.

The altitude of the river at Karuma, and that taken of it nine marches farther north, showed a difference of 1000 feet of fall in this short distance; this was conclusive that cataracts existed, and it has been proved by Sir Samuel Baker that this indication, shown by our boiling thermometers, was correct—that several falls and one great one, the "Murchison Falls," exist here upon this bend of the Nile.

We had heard, when at Unyoro, much concerning the Albert Nyanza; that the Keevero live upon its north-west shore, never cultivate, nor care for anything—man or woman,—their sole occupation and thought being to make the only *white* salt in the country. The mountains on the western shore of the lake were so steep that people must sit down in descending them. A race called the Walæga lived opposite the Keevero. But though told this and many other particulars about the "stones" in the river (meaning cataracts) which prevented boats travelling from Unyoro by water to Lutanzige, we could not get permission to visit it. All was arranged that I should explore this lake; but no inducement would make Kamarasi yield; he was a

miserable, timid, suspicious creature: but I am delighted to think that Baker was allowed to visit it, and hope we shall soon hear that he has explored its farthest extremity and its utmost windings.

Proceeding from Karuma almost due north fifteen marches, never once seeing the Nile, but ascertaining daily how far it was to our left, we again saw it at Paira. We had crossed a few hill-spurs, some streams, bogs, and plateaus; the latter covered with grass the height of ourselves—in fact, we had traversed one of the finest natural positions for large game that can be imagined. The Nile makes a half-circle round it, and our route was the diameter over ups and downs, grass, glade and forest. The most perfect retreat for elephant and buffalo, which were numerous here.

The Nile at Paira was a noble stream, flowing placidly along a reach without a rock and with level banks. A mile or so below this, it is joined by several small streams from the east, and then sweeps round the base of the mountain "Jubl Kookoo," called by M. Miani "Guiri." Here the rocks from the mountain bar the even flow of the stream, the tumbling of the water over many barriers and in passing islands may be heard from some distance. Standing on the rocky shore the river cascaded and foamed for a quarter of a mile or more, carrying reeds, roots, logs, and débris along its wild course,—so wild that no boat could live a moment in it. This was only half of the river, the other branch was concealed by a wooded island opposite us; just the place that elephants would delight in—quiet seclusion with plenty of water and cover.

Here, in the eddies of the river, large fish showed their backs, looking like porpoises in the water; but, though the bank was strewn with large round scales and débris of ashes where natives had been cooking, we had not the art of getting any fish, but, during a halt, we drank of the water and spoke to it in the language of Uganda as an old friend. Its taste was nothing to remark upon.

We inspected the tamarind-tree on the right bank, upon which the Venetian traveller had cut his name, to show the farthest point he had reached from Egypt; the letters "Miani" had been defaced by the growth of bark, and nails had been extracted, but there was no doubt that they were made by this enterprising traveller, M. Giovanni Miani, for, on reaching Gondokoro, we ascertained his name.

Jubl Kookoo is a straight range of bleak, barren, escarped rock, 2000 feet higher than the river, which flows for, say, 60 miles in a N.N.W. direction along its eastern base, in a vast gorge. The right bank is only 200 to 300 feet above

the river, and consists of cones, scantily wooded. The lower ground by the river's edge has many varieties of trees, amongst which there are beautiful sites for houses.

At 3¾ N. lat. the River Asua joins the right bank of the Nile. We had been told that it was so boisterous we could only cross it at certain seasons, and I can believe this; but we were disappointed on reaching it (1st February) to find that we had only to take our trousers off and walk across it. Its sides were marked by deposits of sand and débris, showing that it floods rapidly the steep narrow channel of its bed of rock; but now it was only a rivulet, with a strong current in its centre. We drank its water, which was insipid and not clear; indicating that it came from a marsh or low country, and was not the accumulations from the hill-sides alone. Speke understood that its rise was in the Masai country; whether correct or not, or whether from Unyoro, we have yet to know its source, though it is of little consequence where it comes from, as it adds but a very small current of water to the Nile.

The Jubl Kookoo range is a most interesting tract of country to the geologist, for the strata are seen in one view towering above the bed of the river for 2000 feet. In no portion of Africa had we met with so magnificent an exposure of rock in regular layers. The faces of these crags are barren and steep, marked in perpendicular lines from above by the washing away of the softer parts. At one point there are three distinct terraces; the skyline of the highest corresponds exactly with, or is parallel to, the waving outlines of the two lower terraces, indicating that the strata of the whole are continuous, if not similar.

We could not cross the river, to examine the rocks more closely, as we had no boats and the inhabitants were unknown to us; but, as no European has ever explored this grand mass of mountain, it would certainly yield a rich reward to either geologist, naturalist, or botanist.

On the bank by which we travelled—the right—the country was comparatively flat; the conical hills upon it formed the right side of the vista, and were not above 300 feet high, but we were much interested in the exposed rock, strewn on the route in sharp fragments. The layers of rock were thrown up so vertically that their dip could only be suggested by looking at the mountain across the river. Their stratifications were slaty blue, broken into squares or oblong fragments, like slate-cleavage and mixed with veins of quartz.

The chasm in which the Nile flows past Jubl Kookoo for 50 miles in a straight line looks as if, by a marvellous effort of Nature, a gigantic mine had burst from the depths of the earth, and upheaved, to the left, stratified rock to a height of 2000 feet.

On the 7th of February we left the Nile, proceeding across country in a northerly direction for 60 miles in six stages. In doing so the Bari inhabitants were, I was sorry to see, hostile to our party of Egyptians, whom we had joined at Faloro. We had to proceed in a compact column, well armed and prepared for an attack, for these traders were the terror of the inhabitants, plundering them of their ivory, their cattle, and children; but we got through without much molestation. One night the natives set fire to the grass round our camp, danced, yelled, and drummed by the light of the flames which encroached upon us, and we thought it time to look for the safety of our maps and journals, sitting the whole night watching for an attack, with our rifles by us; but the fear of an occasional shot kept them at bay, and happy were we when day broke: we could breathe more freely. I may remark that this was the only night of our journey that I had ever spent in fear, and that I kept my clothes on ready for action; and it is too disgraceful that this state of things has been brought about by comparatively civilized people,—the employés of the Khartoom traders; it does not exist on the East Coast of Africa, as far as our experience goes.

After leaving the River Asua, the route is across undulations covered with brushwood, low grass, and occasional forests. The watercourses were almost dry, and on one occasion we had to make a march under a hot sun for 12 miles without water. There were few villages till reaching the Bari territory, where the population was large, and the aspect of the land changed into long undulations, cut up by streams with rocky sides, and flowing to the west. Many parts reminded us, from being lawn-like and dotted with single shady trees, that we looked on an English park; but the trees were tamarinds, butter-trees, cacti, &c., and rocky heights, chiefly igneous, occasionally broke the spell.

As I have mentioned, we had been marching through a hostile country with great caution; but when no precaution was necessary, as we approached Gondokoro, our caravan broke into stragglers, all were straining eagerly to reach it, and my excitement became still greater when its distant outline was pointed out.

But how changed all around us looked! We plodded now over an ugly dreary plain of sand, sometimes firm, but at other times heavy. In the far distance a white speck appeared, a house, a tent. Getting nearer to Gondokoro, we could scarcely believe our eyes; there were masts of boats, actually. What delight, what excitement! Our escort of Nubians formed line when within a mile of arrival, blazed their guns, loaded with bullets,

in a childish, dangerous manner, beat their drums and fifes, and led us in triumph to the tent of a Circassian. This did not satisfy us; so off we went in search of one more akin to us, and met a sturdy white face. Baker advanced, and we felt inclined to embrace him. Oh the happy moment! the relief it was to us, finding that our maps, journals, and collections were now safe.

The Nile, on the 15th day of February, 1863, at Gondokoro, may be described. At this season it was at low water, or, if anything, an increase had commenced as noted by Dr. Murie; but where was the flooded Nile we had seen at Unyoro in November? It had not reached Gondokoro yet; and we concluded that this flood had spread itself over the vast swamps in Unyoro, and was filling up the Albert Nyanza Lake, which would overflow and discharge its waters later; probably by March it would reach Gondokoro. Where else could the brim-full river of Unyoro have gone to?

The right bank of the Nile here is generally in two stair-like steps, the highest 19 feet above water-level, and the other, and lower step, 4 feet above water. Sometimes these two steps merge into one bank, or they may be many yards apart. The river is divided by an island upon which the traders place their cattle for safety; these they barter for ivory. The right branch is 150 yards wide, with an average flow of 3 miles per hour. The usual lake-débris discolours it, makes it white mud-colour, which renders it almost necessary to be filtered before drinking. The higher, or old bank, recedes in a flat to the horizon, with the true Egyptian character, which is very uninteresting after having seen the Nile country farther south. There are a few low solitary hills in the north-west, south-west, and south, as laid down on maps.

At Gondokoro I was much surprised to see the fearless way the natives constantly swim across the river, regardless of crocodiles. They only took the precaution of swimming in sets of three or four, with either an earthen jar or a log of pith-wood as their float, or, if they had to convey the carcase of an ox from one bank to another, they used no boat whatever; still the meat was brought over perfectly dry. The reader will wonder how this could possibly be done: the reply is, it was done by putting all the meat into its own skin, inflating it, tying it up at all open parts and swimming across with it. Their mode of swimming is by stretching out the arms alternately out of the water; this seems to be as expeditious or expert a mode as ours, and, while moving along, they frighten the hippopotami and crocodiles by shouting, "Oow-oow!"

At night, while camped on the Nile at Gondokoro, the

sounds were either the hippopotamus or the rifle, the one much more pleasant than the other; the horny trumpeting of the former reverberating either up or down stream was delicious music to the ear, but the crack of rifles only made me dread that some poor native had fallen its victim; for, while at Gondokoro, I saw no law or government.

While here, we saw three boats arrive from Cairo belonging to a respectable Syrian trader. They had sailed on or about the 15th November, and came up the Nile with the north wind in three months, bringing Baker news of the 1st of November from England. We may therefore calculate, from this single recorded instance, that the time to leave Cairo for Gondokoro by country boat is the 15th November. The down-voyage for same distance may be best seen in the Table which follows; which shows that, with the help of a steamer for six days, and camels for fifteen days, we took two months and five days between Gondokoro and Cairo.

This seems a long time; but we must remember the delays consequent upon calms, unnecessary delays of boatmen, the slow journey of fifteen days, with camels going but two miles per hour, and when railways extend to Khartoom and steam-boats carry the passengers hence to Gondokoro, when pilots are appointed who know every rock, shoal, branch, and channel of the river, we shall be able to accomplish the distance in twenty-five days with ease, and be quite independent of the present laid down season of "North" and "South" wind travelling.

Time taken on our Route from Gondokoro to Cairo, with Dates.

	Days.
Gondokoro, by "diabeeah," to Khartoom, 26th February to 30th March, 1863	32
Khartoom, ditto Berber, 15th April to 23rd April	8
Berber, by camels, to Korosko, 27th April to 12th May ..	15
Korosko, by diabeeah, namely, country boat to Philæ, 7 P.M., 12th to 16th May	4
From Aswan to Cairo, by Viceroy's steamboat (specially dispatched for us), A.M., 19th May to 25th May	6
Total	65

The remaining portion of our journey down the Nile to Aboo-Ahmed, with the winds, seasons, &c., may be seen best in the following Table:—

THE NILE FROM GONDOKORO TO KHARTOOM, KHARTOOM TO BERBER, BERBER TO ABOO AHMED.

Dates.	Approximate Lat.: Name and Nature of the Banks of Nile.	The Nile, its Width, Current, &c.	Course.	Time Moving.	Distance Gone.	How Gained.	Wind.	Remarks.
1863.				Hours.	Miles.			
Feb. 26	5°·10 N. lat. Banks flat to horizon, forest trees covered with creepers.	2 to 300 yards wide; boats struck once.	N.	4	16	Sail and row .	P.M. South.	
,, 27	5° to 6° lat. Berri country. Cattle numerous; wood collected.	Ditto, boat struck twice. No lead is ever heaved.	N.W.	12	30	6 to 6 P.M. Row	North	Head wind most of day.
,, 28	6° N. lat. Shyr and Alliab. Cultivation and cattle; banks flat and grassy.	The river breaks into four or five channels here, and continues so with a winding course for 70 miles. The Bahr Giraffe is one of these channels.	N.W.	9	20	5 till 12. Row 3 till 6. Row.	. .	Anchor all night.
March 1	6°·5 lat. Alliab people, hospitable; banks flat, cultivated, or covered with forest.	River branch winds very much, and there is no clear space to land; nothing but swamp vegetation.	N.W.	8	32	5 till 2. Row. Halt all day from 2 P.M.	. .	Halt at Shenooda's depot from 2 P.M.
,, 2	6°·45 lat. Bhor country, where the Bahr Giraffe leaves the Nile. Had to take in firewood, as there are swamps ahead.	Our branch is eighty yards wide, with trees occasionally.	N.W.	16	40	8 to 10 A.M. Sail.	South, 8 to 10. .	Leave ditto 8 A.M., and pull all day and night; our boat was attacked by sticks and spears being thrown into it.
,, 3	7° lat. At 2 P.M. arrive in Keedge country; swamps filled with mosquito.	River quite surrounded by swamp vegetation. The Nile has its smallest degree of longitude at this point.	N.W.	12	30	Row.		
,, 4	7°·8 lat. Abeokooka, Siddera country. All swamp till 2 P.M. Arrive at the station of De Malzac.	The river seems to be again united; it runs in semi-circles north-west to north-east; current one mile per hour.	N.E.	6	36	7½ to 2. Sail .	South till 2 P.M. .	Sometimes sailed 6 to 8 miles per hour.
,, 5	7°·45 lat. Nouer country. Peopled on right bank, though no huts seen.	Weeds and rushes floating down, one mile per hour. River 80 yards wide, and hemmed in by rushes.	N.E.	16	20	Sail and row .	North	Floating down all night.
,, 6	8°·5 lat. Nouer country, no huts visible.	The river-banks are of rushes, so that no view is obtained beyond them from our boat.	N.E.	16	18	Row . . .	Calm all night, calm at noon.	Rowed all last night.
,, 7	8°·30 lat. Nouer country. People, cattle, and goats seen on the left bank.	Banks are now of grass . . .	N.N.E.	16	20	Row. . . .	North	Left bank a plain.

,,	8	8°·45 lat. Nouer country. Fires inland on both banks; no view.	River is divided to-day, and still shut in by papyrus. No landing.	N.N.E.	16	16	Row. . . .	North, 8 to 10 A.M.	Saw the North Star; first time for nearly three years.
,,	9	9°? lat. Nouer country. A few dry places to land; firewood collected.	River looks like a great sewer, with scarcely any current.	N.N.E.	12	36	Sail 7 to 11. Row 4 to 6. Midnight.	South, 7 to 11 A.M. .	Powder served out in case of attack by the Shillook.
,,	10	9°·25 lat. Shillook country. View quite shut off by rushes to any depth.	Bahr Gazal joins our left bank and our channel becomes wider; the current now 2 miles per hour.	E.	10	20	Row.		
,,	11	9°·25 lat. Shillook. Banks dead level, four to five feet above the river edge; plenty of unfenced villages on the left bank. Acacias on the right.	Little current, 250 yards wide. River Giraffe, a rapid 4 mile per hour current, 80 yards wide, joins right bank at an acute angle, bringing much débris.	E.	6 to 8	10	Row all this night.	North-east . . .	A strong wind from 11 to 4 makes us lie to.
,,	12	9°·25 lat. Shillook. Good landing and huts; palms on left bank. Islands here. Huts on right bank.	River Sooba joins Nile without current but with floating débris, at a right angle, and does not give it more water in twenty-four hours than the Giraffe.	E.	12	20	7 till 3 struck by head wind.	North.	Sooba 100 yards across, left bank 12 to 20 feet abrupt bank. Right bank is 6 feet above water and covered with reeds.
,,	13	9°·45 lat. Shillook, villages on left. Denka on right, where there is firewood; banks generally cleared of reeds.	500 yards wide since Sooba joined it, and is often like a sea. Islands; not much current now.	45°	8	16	Till 8 A.M. rowing. Halt till 3 P.M.	North.	
,,	14	10° lat. Dainab country on left bank, 12 feet above water and well wooded. Party of horsemen encamped on left bank.	Many long islands, we missed two of our boats through them.	30°	3	10	Row . . .	. .	A route by land from here to Khartoom. Halt all day.
,,	15	10°·20 lat. Dainab. Shillook villages numerous, but no Denka ones visible.	Nile is more than one stream . .	36°	?	10	Row and sail .	North, from 9 A.M. till 1.	Row all night.
,,	16	10°·30 lat. Left bank dry and sloping, many acacias; day heat great.	Traffic considerable, by canoes made of grass.	N.	?	15	Row . . .	North, from 9 A.M. till 3, and west afterwards.	
,,	17	10°·32 lat. Banks level, and 6 feet above water, thinly covered with a reedy grass 4 to 5 feet high.	A branch from the Sooba joins east by south of Kaka.	W.	?	16	Row all night. Sail 2 to 5 P.M., and at 7 P.M.	North, 11 to 2 . .	Horsemen on banks.
,,	18	11¼° lat. 7 A.M. arrive at Kaka, grazing and acacias on banks. Dome-like hill seen on right bank at 7 P.M.	The river is now a lake in size. Kaka has two hundred grass huts, but there is no provision procurable here; no grain, &c.	N.	6	36	Sail at 10 A.M. till 5, when breeze dies.	South all day, again at 8.	Camel route on banks; parties proceeding up stream by left bank.
,,	19	12° lat. The trees on both banks are bowered with creepers. Take in firewood.		N.	?	41	Sail and row all day and night.	South, 8 to 4 P.M. .	Sail all last night.

THE NILE FROM GONDOKORO TO KHARTOOM, KHARTOOM TO BERBER, BERBER TO ABOO AHMED—*continued.*

Dates.	Approximate Lat.: Name and Nature of the Banks of Nile.	The Nile, its Width, Current, &c.	Course.	Time Moving.	Distance Gone.	How Gained.	Wind.	REMARKS.
1863				Hours.	Miles.			
Mar. 20	13° lat. A strange sight appears ½ mile from right bank, namely, five hills with vertical strata.	There are rocks in the river, some were white and rounded; wishing to cross the river, which is not so wide to-day.	N.N.E.	24	34	. .	North, 12 to 3 . .	Sail part of night.
,, 21	13°·20 lat. *Acacia arabica* being felled and built into large boats.	Average width 400 to 500 yards .	N.N.E.	12	20	Sail and row .	South till 10 A.M., when a gale blew us for safety into an arm of the river till 5 P.M. North from 5 till midnight.	
,, 22	13½° lat. 10 A.M., village of Elais on right bank. Immense herds of camels and cattle on the right bank—now populous.	Right bank is of drifted sand, which shelves in under acacias. River 500 yards wide.	..	19	28	Sail and row .	South, 8½ till 4 P.M.	
,, 23	13¾° lat. Trees and cultivation; people industrious. Five hills of Araskole seen on left bank.	River one mile wide, islands numerous and cultivated.	..	18	30	Row . . .	Unfavourable.	No wind during the heat.
,, 24	14° lat. Shellai. Banks cultivated. Right bank is of sand drifted here by the periodical north wind.	. .	N.	18	12	Row, sail, and tow.	North and N.N.W., from 7 to 11, and up to midnight.	Pass five to six sailing boats daily now. Halt at Shellai 11 till 5 P.M. during fearful heat.
,, 25	14°·26 lat. 5 A.M. Al-aga on left bank. Hillocks of sand cover the alluvial of right bank.	River one mile wide, full of shoals and breakers coming down stream; banks flat with few trees.	N. & N.E.	9	10	Tacking and rowing till midnight.	North	Boisterous head wind from 5 A.M. till 3.
,, 26	14½° lat. Gutæna. Left bank flat and cultivated. Sand hillocks and a perpendicular wall of alluvial on the right bank.	The navigation yesterday and to-day is very difficult, as the river is much exposed here to storms from the north.	..	4	5	Tacking . .	North	Boisterous head wind makes us moor to all day.
,, 27	14¾° lat. The ancient river bank on the right shore is a perpendicular wall, there is verdure up to the foot of it.	Irrigation was observed here by the Persian wheel; not observed before upon the Nile.	..	..	7	. .	North	Cotton cultivations.
,, 28	15° lat. Right bank is still of rolling hillocks of sand. 8 P.M. opposite Jubl Musa on left bank; 11 P.M. opposite Jubl Brœne.	Little or no current, 1200 yards wide. Shoals.	N.N.E.	..	10	. .	North.	

,, 29	15°·25 lat. 5½ A.M. the solitary hill of "Jubl Aolee" ½ mile from right bank. No longer sand hillocks, the right bank is green sward shaded by acacias.	A spur of rock runs in a north-west direction across the river from Jubl Aolee. Island of Marda is 5 miles north of Aolee. Some distant undulations visible on the left bank. Channel less shoaly.	N.	17	13 (4 + 4 + 5).	Row, sail, and tow.	North, 1 to 5 P.M. .	Deep water at Shigr Nagara.
,, 30	15°·30 lat. 6 A.M. Khartoom surrounded by date palms; banks flat and bare. From the junction of the two Niles, there are detached hills visible a few miles away on left bank to north-west.	The Nile is in two branches where it joins the Blue Nile; we descended the left channel, which has a sunken rock in its right centre; our current was a rapid of dirty water, the Blue Nile sparkled and had scarcely any flow. We poled up it for ¾ mile and anchored at Khartoom, on the left bank of the Blue Nile.	N.	4	2 to 5.	Row and pole.		
Apr. 15	From Khartoom by boat to Halfaya, lat. 15°·45 on right bank.	. .	..	7	..	Row.		
,, 16	16¼° lat. Banks sandy and of perpendicular clay, covered with "Jow" jungle. Took in a pilot.	One hippopotamus seen. Nile mud coloured as usual, sometimes only 180 yards wide; but at 5 P.M. look down it for 4 miles and see countless rocks in the channel. Mount Rooeeyan and a chain of low hills to its right.	N.	All day	..	Row . . .	No wind . . .	Boat had to be rowed fast through the rocky channel.
,, 17	16°·30 lat. To Murnat, pass to the left of the island of Rooeeyan, lat. 16°·12, and keep between low hills of splintered rock.	River divides below Mount Rooeeyan. Channel dangerous and narrow in places; we took the right channel of three.	N.E.	..	..	Row. . .	. .	Anchor all night.
,, 18	Sullawah. Banks flat and tame, here and there low hills barren; camels numerous on banks.	Not many rocks in the channel to-day.	E.N.E.	..	..	Row . . .	North	9 till 2 a storm from north, with sand, made us anchor.
,, 19	16°·41 lat. M'tama. Persian wells on the banks, cotton, flocks; left bank steep.	River without rocks to-day.	E.N.E.	13	..	Row from 5 till 3, and 4 till 7.		
,, 20	Miskutap, passing Schenda on right bank.	River had no rocks, but at 7 P.M. our captain struck work, fearing to pass rocks in front, as it was too dark to move.	E.N.E.	..	..	Row from 4½ till 7.	North	From 7 A.M. till 4½ a suffocating hot wind from north, with dust stops us.

THE NILE FROM GONDOKORO TO KHARTOOM, KHARTOOM TO BERBER, BERBER TO ABOO AHMED—*continued.*

Dates.	Approximate Lat. ; Name and Nature of the Banks of Nile.	The Nile, its Width, Current, &c.	Course.	Time Moving.	Distance Gone.	How Gained.	Wind.	REMARKS.
1853				Hours.	Miles.			
Apr. 21	16°·56 lat. Meroe. Shore is hard and flat, strewed with curiously shaped, lustrous, heavy, knobs of clay. Slept all last night upon the sand of the shore as the planks of our boat are so hard.	6 A.M. one speck of a rock at the end of a sand shoal. Date palms well irrigated on left bank. Little current; width 350 yards.	N.E.	..	..	Row 5½ till 11¼, and 5¼ till 10 P.M.	North, at 11 A.M. .	2 P.M., visit pyramids and sphinxes 2 miles from river bank. There are 3 sets of pyramids all stone-faced and the 3 sphinxes are of blue stratified rock.
,, 22	Above River Athara, passing Damur on right bank; Ageba on left bank. Splinters of flint about. Trade of salt, ropes, earthenware, baskets lie for export to Khartoom, opposite town of Damur.	To-night we sleep upon the sandy shore of the right bank, quarter of a mile above River Athara, lat. 17° 40'.	..	..	..	Row . . .	Calm.	
,, 23	17°·57 lat. Berber, where we halt, procuring camels, 24–27.	River Athara joined at a right angle our right bank, its water now is 55 yards wide, no stream evident; from bank to bank it is 150 yards across. It joins with the same kind of sweep as the Blue Nile, and its banks are of steep mud. Nile has a course over rock for 2 miles below the junction of the Athara; they are now 1 to 3 feet above water.	..	..	..	Row . . .	North, 7 till noon.	
,, 27	March with camels from Berber to El Khore. Footing hard and firm.	. .	..	2	6	Walk . . .	North	Disagreeable wind P.M.
,, 28	18°·16 lat. March to Ginenect'ah along right bank; route like a gravel walk, with few bushes, acacias, palms, and euphorbias.	Right bank high, a ferry at El Abidy. Island at Ginenect'ah.	..	..	14	Walk.		

,,	29	In desert; route either high, shingled, ground, or the rocks were in perpendicular dykes of quartz, followed by an unctuous, purple-blue rock, with irregular fracture and by splinters of a ringing rock. The oldest strata were the most southerly.	Touch the river at Wadi Khumar, lat. 18° 19', where are several channels, having a rapid course and many rocks.	..	8½	22	Walk . . .	North	Wind cutting cold.
,,	30	To Wadi Shirreg; march over high ground strewed with gravel and rocky in places.	River bed rocky, rushes growing on the rocks, shallow and not navigable looking, 500 yards wide. Palms on both banks, the right bank is high.	..	9	..	Walk.		
May	1	To Gægee. Road runs alongside of cultivations, afterwards the track was heavy walking over splinters of rock and pebbles.	At Aboo Hashem, lat. 18° 53', the right quarter of river's width is of rock, 300 yards wide. Current 2½ miles. At Gægee the river is gentle in current with few rocks.	N.W.	12	29	Walk.		
,,	2	To Aboo Ahmed, lat. 19°-28. Easy level route to Musra Jahesh, where there are people on left bank, and palms on right. Jubl Hacee, a high, abrupt, bare block of hill, is 5 miles south-east of this. Aboo Ahmed is a wretched place, with a mud fort all but smothered in sand, on the right bank.	River at Musra Jahesh is 200 yards across, with rock on both banks, jutting into the river. The plateau of the desert was interesting from the varieties of marbled, pink-red, blue, and white sedimentary rocks.	..	9½	20	Walk.		

FLORA AND FAUNA.

The following is an account of the Flora, with a list of the invertebrate and vertebrate animals either collected or observed by us, with notes upon the several objects. The scientific names have been supplied, with the kind aid of the authorities who are mentioned in their proper places, or they have been copied from the Transactions of different Societies.

The lists comprise as follows:—

Plants collected	861
Specimens of insects	292
Species of land and freshwater shells	27
Species of marine shells	85
Freshwater fish	11
Snakes	12
Lizards, &c.	8
Tortoises	3
Birds	140
Mammals	75
Total	1514

FLORA.—Plants were collected throughout the journey, commencing at places on the voyage out, and ending with Egyptian territory at 25° N. lat., but we had little facility for carrying our collections; having neither horses, carts, nor camels, all had to be carried by native porters.

	Species.
Rio Janeiro plants	24
Delagoa Bay, ditto	22
Europa Island, ditto	15
Johanna Island, ditto	24
Zanzibar Island, ditto	15
African plants from 7° S. lat. to 25° N. lat.	761
	861

The above were deposited in the Royal Herbarium at Kew. A list of the African plants, prepared by Dr. T. Thomson, appeared in the Appendix to Speke's 'Journal of the Discovery of the Source of the Nile;' they have been noticed or described by Professor D. Oliver in the 'African Flora,' and need not be enumerated here, as the whole collection of the "Speke and Grant Expedition," with one hundred illustrations by Fitch, of the new and rare species, forms the twenty-ninth volume of the 'Linnean Society's Transactions,' a copy of which has been presented to this Society.

INVERTEBRATE ANIMALS.—*Corals.*—Zanzibar, and the other Islands which are seen from it, are formations made by coral-polypes upon volcanic rock: they look, when seen from a dis-

tance, like great arks upon the sea; this effect being produced by a dense tree-vegetation, which is only 10 to 50 feet above the level of the sea. Blocks of coral are quarried by the natives, and form the material for building houses. Upon this formation there is a stratum of red pulverized clay resembling what was observed upon the island of Johanna farther south. Through this friable clay, wells are dug to a depth of 40 feet; but the people also depend upon a hot spring—too hot to drink—for their water-supply.

Coral may be best seen from a boat, growing, or rather being formed, in great beauty, in the bottom of the sea. Two species were collected: the white *Seriatipora lineata*, and the deep crimson "Organ coral," *Tubipora musica*.

Tape worm. Tænia solium (?)—Our followers suffered very much from this parasite, having little or no vegetable food during the journey. The segments came away from them at all times; and we had no remedy, though a decoction from the root of a shrub with straight thorns, found in Karagweh, and resembling a Balsamodendron, was resorted to.

Intestine worms.—The paunches of Burchell's zebra were found to be full of bunches of entozoa adhering to the coats of the stomachs.

Leeches were comparatively scarce, not being numerous, as they are in the lower ranges of the Himalayas, where, during the rains, they penetrate the socks and adhere to the limbs of any one walking through long grass.

Earth worms we used as bait when fishing, and had no difficulty in finding them where there was moisture.

Wood-lice, land crabs, spiders, scorpions, centipedes, and other such, were all observed; also, near the coast, the curious black horny-skinned Iulus with its many small feet, and 3 to 4 inch long body. Bird and beast parasites, cicadas, land bugs, grasshoppers, locusts, crickets, termites, fleas, flies, fire-flies, gnats, caterpillars, butterflies, moths, ants, wasps, bees, beetles, weevils, and glowworms, were of various species, a few of which will be hereafter mentioned, though some may be specially noted now.

Bugs.—Very numerous, particularly in deserted villages; they come out to eat at dusk and get inside the clothes, but we never found that their bite created annoying inflammation, probably because our blood had been seasoned by ten years of an Indian climate. For this reason, new-comers in hot countries are always more tried by such biting insects, and an explorer should certainly be acclimatised.

Locusts.—This insect was frequently met with, but never in the form of a plague clouding the skies as seen in the Hima-

laya ranges. We were told that Unyanyembe, in 5° S. lat., was stricken with them for ten successive years, but whether it will be again visited after the period of hatching—said to be 17 years—remains to be seen. Those seen, brought in as food by the people of Uganda at the equator, 25th April, 1862, were 1 inch long, with the hinder legs similar to those of grass-hoppers, 2 pairs of wings, antennæ 1½ inch long, close to the eyes, and not much coloured about their bodies or wings. I have seen our men frizzling the legs of this insect, and eating them with great relish.

White ants.—In certain localities, such as a few marches from the sea-coast, to the north of the River Kitangule, and in Unyoro and Ukidi, their formations were abundant, some of them 50 yards in circumference of base. The people eat them with avidity, catching them in a simple manner by placing a wicker-frame over their mounds; under this frame an earthen jar is laid, so that when the winged ones take flight they must fall into the jar, whence they cannot rise; a bark-cloth is placed upon the wicker during the seasons these insects are swarming, so that all the young and delicate ones may be caught for food.

Flies were not such pests as fleas and *mosquitos*, which swarmed all along the route. At Karagweh the long-legged grey mosquitos keep one's legs in perpetual motion, biting mostly in the evening, through socks and trousers. Netting is absolutely necessary to secure rest at night in Uganda and on the Nile, when the vegetation of the banks may be of rushes.

Caterpillars and butterflies. The largest caterpillar observed was on the 11th December, 1862, in Madi. It was very handsome, 3 inches long, black-bodied, with 12 rows of white, thorn-like spines across its body from head to foot. It was feeding upon the leaves of the *Crossopteryx febrifuga*. We were informed that the people of Heeao eat this species as well as other kinds of caterpillar. On the 26th January, 1861, at Kazeh, we observed that the young rice-crop was being eaten by a small caterpillar called "doodoo," with black body and green belly; it destroys whole fields, and the people have to pick them off and destroy them to save their crops, or they allow the "Locust bird" of the Cape to fatten upon them. As far as we observed, Africa on the equator is not a country favoured by many species of butterflies or of birds; the vegetation has too much sameness about it. There are remarkably few species. In Ugogo, during December, after the first fall of rain, one species came out with the sun in considerable numbers, flitting over the pools of water. They were small, either yellow or white, with a few spots of black upon their wings.

Ants.—There were many species seen, but the most vicious was a red insect called the "Seeafoo," observed in Zanzibar Island and in the interior. The natives warn one not to walk where it is, as the sting is severe. At Ukuni, for several successive nights, I was disturbed by the noise of some calves in the hut where I slept; by-and-by I was attacked by ants pulling at my whole body, and only got rid of them by surrounding my iron bedstead with live charcoal. The house was still infested by them; the natives, therefore, put a flock of one hundred goats into the hut for several nights, and this fairly stamped out this pest of "Seeafoo" ants. They were small and black, but amongst them there were some monster black ones.

Sand wasps, or burrowing *Hymenoptera.*—On the 22nd January, 1863, while digging sand on the bank of a stream, a swarm of these surrounded me. Their abdomens were yellow, and also green, with bars across, wings four, feet six, hind ones flattened, they could sting upwards and ordinary ways; their habit was to burrow for six inches, deposit a cocoon made of the leaves of a tree, *Stereospermum sp.*, now in blossom, and place within it a yellow watery substance, which smelt unpleasantly, and had but the faintest taste of honey or wax. The natives said truly that this substance is transported by the bees to their real nests as food for the young; but the curious circumstance about this insect is that these cocoons are almost immersed in water, though covered with sand.

Bees.—The hive-bee, or one similar, was seen along our whole route, where the people frequently kept them in hives made of bark. They were first observed on the beautifully wild island of Johanna upon the east coast. Here, on the 14th August, we came on the hive-bee in the slit of a tree; and, of four specimens, thought them smaller and more game-looking than our home kind. In Unyamwezi honey was more plentiful than in any portion of our route. We purchased it for old cotton-bags, or for American sheeting, obtaining 34 lbs. weight for 3 yards. The honey was unstrained, white, or rich red, varying in flavour according to the flowers it had been gathered from; that gathered from species of *Bassia* and *Zygia* is esteemed. The season, at 5° S. lat., for making new hives and for collecting swarms is June, when the villagers make hives from the bark of a tree, namely, a cylinder—a yard long, and closed at both ends, except an aperture—is held together by wooden spikes, and then placed, for swarms to go to, in the fork of a tree with the bark outside. Beeswax is unknown as an article of trade to the natives.

LIST of INSECTS, &c. (from the 'Proceedings of the Zoological Society of London, March 8th, 1864) collected by Captain SPEKE during the EAST AFRICAN EXPEDITION. By FREDERICK SMITH. Revised to this date by Mr. WATERHOUSE, British Museum.

COLEOPTERA—GEODEPHAGA.

Anthia striatopunctata. Guer.
Polyhirma polioloma. Chaud.
Scarites procerus. Klug.

HYDRADEPHAGA.

Dineutes Africanus. Aub.

LAMELLICOMIA.

Rhizotrogus —?
(This must be a mistake. I find no Rhizotrogus in the collection. It should be "Anomala" sp.? of which there are two specimens from Captain Speke's collection. W.)
Gymnopleurus profanus. Latr.
Trox Natalensis. Bohem.

HETEROMERA.

Adesmia intricata. Klug.
Stenocara sp.
New genus? near Tentyria.
Phrynocolus —.
Anomalipus sp.
Epicauta gigas. Westw.

RHYNCHOPHORA.

Cleonus —.

LONGICORNIA.

Purpuricenus, new sp.

HYMENOPTERA.

Formica longipes. Gerst.
Ponera pestilens. Smith.
Dorylus helvolus. Linn.
Mutilla Guineensis. Fabr.
Mutilla bilunata. Gerst.

FOSSORES.

Ammophila —?

DIPTERA.

Dexia (new subgenus).
Asilus —?
Bengalia —?
Chrysomyia clara.
Tabanus —?

ORTHOPTERA.

Empusa —.
Phymateus squarrosus.
Cyrtacanthacris flavescens. Walker.
Heterodes Servillei. Reich.
Akicera punctosa. Walker.
Akicera femoralis. Walker.
Gryllotalpa Africana. Pal. Beauv.
Gryllus Capensis. Fabr.
Pamphagus apicalis. Walker.
Periplaneta fusata. Walker.

NEUROPTERA.

Myrmeleon —.
Termes bellicosus. Sm.

HEMIPTERA.

Polymerus —.
Odontopus sexpunctatus.
Dysdercus albicollis.
(End of Insecta.)

MYRIAPODA.

Spirobolus pulvillatus.
Eurydesmus oxygonus. Peters.
Ixodus, 2 species.
Spirostreptus gigas. Peters.

ARACHNIDA.

Mygale sp.?

The collection made over to the Museum consisted of two hundred and ninety-two specimens, namely:—

146 Coleoptera,	26 Diptera,
29 Orthoptera,	46 Hymenoptera,
29 Hemiptera,	4 Termes,
6 Homoptera,	2 Myrmeleon.

And of this number, only the above forty-one have been named as yet.

Dr. H. Dohrn, who examined our Nile shells, writes: "We learn that up from the mouth of the Nile to the Victoria Nyanza, at a distance of more than 32° of lat., we meet with exactly the same species." (*Vide* 'Proceedings of the Zoological Society,' 8th March, 1864.)

Victoria Nyanza and Albert Shells.—The shells marked by a *cross* were collected in undoubted Nile-land, and it is interesting to remark upon them that only one of fifteen species was found in a region unconnected with the Nile, and then it (*Paludina bulimoides*) was called by Dohrn the only North African, or Nile species in the collection from Nyassa.

Tanganika shells.—The four species collected in this lake do not appear in the lists from the other four localities, which indicates a distinct and separate region.

Nyassa shells.—Twenty of Dr. Kirk's species are different from the shells of Nile-land and Tanganika; but six of his shells were found on the east coast of Africa by Captain Speke.

Mombas and Seychelle.—*Physoptis Africana* is common to Lake Nyassa, and was mixed up with Captain Speke's Nilotic shells. *Melania tuberculata* is found in all the regions except Tanganika. The others in the list are all different from those in the other regions.

A correspondent and naturalist, Mr. A. Cruickshank of Aberdeen, has examined these lists of shells, and writes:—"I have compared the four lists of shells in the Table you sent. Each list has evidently a facies distinct from the others. There are few species common to any two of the lists, and still fewer common to all four. This alone would seem to show that each list of species indicates a distinct basin; and doubtless a similar inference might be drawn from the mammals, birds, reptiles, freshwater fishes and insects of the same several basins."

ALPHABETICAL LIST of MARINE SHELLS purchased from a Dealer or gathered at ZANZIBAR by me, and named by Mr. SMITH, British Museum.

NAMES.	Habitat as noted upon the same Species in the British Museum.
Achatina reticulata. Pfeiffer	Africa.
Anolacia torosa. Meusch	Mozambique.
Atys Naucum. Linnæus	No locality.
,, *cylindrica.* Chemnitz	No locality.
Bulla ampulla. Linnæus	Britain? Isle of France.
Cardium lyratum. Sowerby	Isle of Negros, one of the Philippines, lat. 10 N.; long. 122 E.
,, *pseudo-lima.* Lamk.	No locality.
,, *enode.* Sowerby	Ceylon.
,, *hemicardium.* Linnæus ..	Indian Ocean, Isle of Zebu, one of the Philippines.
Cassis torquata. Reeve	New Holland.
Cerithium Kochii. Phillipi	Isle of Zebu.
,, *nodulosense.* Brug	Coast of Africa.
,, *asperme var.* Pease	Sandwich Isles, Isle of France.

ALPHABETICAL LIST of MARINE SHELLS—*continued.*

NAMES.	Habitat as noted upon the same Species in the British Museum.
Chama macrophylla. Chemnitz	West Indies.
Conus betulinus. Linnæus	India and Ceylon.
,, *obesus.* Hwass	Not observed.
,, *striatus.* Linnæus	Africa, Isle of Annaa.
,, *terminus.* Lam.	Ceylon and Mauritius.
,, *tessellatus.* Born.	Madagascar.
,, *textile.* Linnæus	Asia and Isle of Annaa.
,, *virgo.* Linnæus	Africa, Ceylon, &c.
Cypræa carneola. Linnæus	Asiatic Ocean, Isle of Annaa, Sandwich.
,, *caput-serpentis.* Linnæus ..	Mauritius and Mussatella Islands, New Zealand.
,, *caurica.* Linnæus	Indian Ocean, Red Sea, Eastern Seas.
,, *diluculum.* Reeve	Same shell. Philippine Isles.
,, *undata.* Soland.	
,, *Isabella.* Linnæus	Mauritius and Sandwich Isles.
,, *Lamarckii.* Gray	Mozambique.
,, *lynx* (young). Linnæus ..	Mozambique and Madagascar.
,, *helvola.* Linnæus	Indian Ocean, Ceylon, Sandwich.
,, *moneta.* Linnæus	Atlantic, Ethiopic Oceans, West coast of America and Fiji Islands.
,, *onyx.* Linnæus	Asia, San Diego, California.
,, *reticulata.* Martyn	Eastern Seas.
,, *staphylæa.* Linnæus	Philippine Isles, Sandwich.
,, *tabescens.* Soland.	Sandwich, Ceylon.
,, *talpa.* Linnæus	India, Sandwich.
,, *vitrellus.* Linnæus	Indian Ocean, Eastern Seas.
Dentalium longitrorsum. Reeve	No locality.
Dolium costatum. Deshayes	No locality.
,, *Deshayesii.* Reeve	Philippine Isles.
,, *olearium.* Lamk.	Ceylon.
,, *melanostoma.* Jay	
Ennea area. Dunker	Not found in cases.
Fasciolaria trapezium. Linn.	Philippine Isles.
Ficula reticulata. Lamk.	Not found in cases.
Harpa ventricosa. Lamk.	No locality.
Mactra hians. Phillipi	
Mitra intermedia. Kiener	Not found in cases.
,, *papalis.* Lamk.	Sandwich Isles.
Murex brevispina. Lamk.	Coast of Arabia, Swan River.
,, *haustellum.* Linnæus	Asia, America, and Red Sea.
,, *ramosus.* Linnæus	Eastern Seas.
Nassa coronata. Lamk.	Natal, South Africa.
Natica mamilla. Lamk.	Isle of Luzon, Fiji Island.
Navicella porcellana. Linn.	Mauritius.
Obeliscus maculosus. Lamk.	No locality.
Oliva inflata. Lamk.	Zanzibar, Carmione. Gray.
Ovula angulosa. Lamk.	Not found in B. M.
Pleurotoma Garnonsii. Reeve	Mozambique, Isle of Zebu.
Pteroceras aurantia. Lamk.	Philippine Islands.
,, *lambis* (young). Linn. ..	Bramble Key, Torres Straits.
,, *rugosa.* Sowb.	Society Islands.
Pyrazus palustris. Linn.	East Indies, Australia, Port Essington.
Pyrula bulbosa. Soland.	Not found in B. M.
Ranella foliata. Broderip	No other specimen observed in B. M.
Solarium perspectivum. Linn.	Madagascar.

VICTORIA NYANZA. The "Speke and Grant Expedition." *Vide* 'Proceedings of the Zoological Society,' for this complete List, 8th March, 1864.	ALBERT NYANZA. "Sir S. Baker's Expedition." *Vide* 'Proceedings of the Zoological Society,' for this complete list, 26th June, 1866. By Henry Adams, F.L.S.	TANGANIKA LAK ings of the Zoo
Vitrina, sp.? Locality doubtful. *Nanina*?, *Mozambicensis* (Pfr.). Uzaramo and Victoria Nyanza	.. ..	.. .. ..
+ *Limicolaria* (Bulimus), *Nilotica* (Pfr.). Karagweh and Uganda + *Limicolaria flammea* (Müll.) Ditto + *Limicolaria tenebrica* (Reeve). Uganda	*Limicolaria tenebrica.* Is found at Ibu and Guinea ..	*Bulimus Caill*
+ *Achatina Spekei* (Dohrn, n. sp.). Victoria Nyanza	.. ..	*Achatina* ? *gl* ganika and
Cyclostoma calcarium (Sow.). Locality doubtful	.. ..	.. .. ..
Limnæa, sp. Victoria Nyanza and White Nile	.. ..	.. .. ..
Planorbis, sp. Victoria Nyanza, and 4° north latitude	*Planorbis*, sp.? Brought by Speke from Victoria Nyanza. H. Ad.	.. .. ..
Physopsis Africana (Krauss). Mixed up with Nilotic shells, locality doubtful	.. ..	.. .. ..
Lanistes purpureus (Jonas) *Lanistes ovum* (Peters) } Probably East African .. .. + *Lanistes Boltenianus* (Chemn.). Nile and Victoria Nyanza ..	*Lanistes*, sp.? Too immature for the species to be determined	*Lanistes sin*
Ampullaria speciosa (Phil.). River Kingani, East Coast. *Navicella porcellana* (Linn.). Johanna Island.		
+ *Paludina unicolor* (Oliv.). + *Paludina bulimoides* (Oliv.). } Nile & Lake Victoria Nyanza; one specimen of the latter is gigantic	.. ..	.. ..
Melania tuberculata (Müll.). Probably from Nilotic district ..	*Melania tuberculata.* (Müll.)	*Melania nass*
+ *Corbicula fluminalis* (Müll.). Probably from Nilotic district	+ *Corbicula radiata* (Phil.) + *Corbicula purilla* (Phil.) } Well-known Nile shells. (H.Ad.)	
+ *Unio Caillaudi* (Fer.). + *Unio Ægyptiacus* (Caill.). } Known Nilotic species	*Unio Caillaudi* (Fer.) *Unio Ægyptiacus* (Caill.) } Well-known Nile shells	*Unio Burton*
Unio Mozambicensis (Peters). This lives with the following species in the River Zambesi	*Unio Bakeri* (H. Ad.) Albert Nyanza resembles U. aferula (Lea), from Lake Nyassa .. .. *Unio acuminatus* (H. Ad.). Albert Nyanza	*Unio* sp. *Unio* sp. } Ugc *Unio* sp.
Spatha Petersi (Martens)	.. ..	.. .. ..
Spatha Wahlbergi (Krauss). Known from the Limpopo River in Caffraria	.. ..	.. .. ..
+ *Spatha dubia* (Gmel.) + *Spatha rubens* (Lam.) } Both common Nile shells	.. ..	.. .. ..
+ *Etheria Caillaudi* (Fer.). Confined to Upper Nile.		
		Pleiodon Spe *Lythoglyphus* *Pupa grandi*
	Vivipera unicolor (Oliv.). *Bithynia badiella* (Parr).	
Total Twenty-seven.	Total Twelve.	

To face page 309.

"Sir S. Baker's Expedition." *Vide* 'Proceedings of the Society,' for this complete list, 26th June, 1866. By Henry Adams, F.L.S.	TANGANIKA LAKE. "Burton and Speke's Expedition." *Vide* 'Proceedings of the Zoological Society,' for this complete List 1859, with plates.	NYASSA LAKE AND ZAMBESI RIVER. "Livingst 'Proceedings of the Zoological Society, 28th Feb complete List.
.. ..	.. ..	.. ..
nebrica. Is found at Ibu and Guinea ..	*Bulimus Caillaudi* (Pfr.). Between Tanganika and East Coast	*Bulimus strictus* (Martens) } Under *Bulimus catenatus* (Martens) } seaso *Bulimus Kirkii* (Dohrn, n. sp.) Mainlar
.. ..	*Achatina? glutinosa* (Pfr.), one specimen. Between Tanganika and East Coast	*Achatina Lamarckii* (Pfr.) .. .. ..
.. ..	.. ..	*Achatina panthera* (Pfr.). Mozambique
.. ..	.. ..	*Cyclostomas calcareus.* Near Tete and or
		Limnæa Natalensis (Krauss). Lake Ny
Brought by Speke from Victoria Nyanza.	.. ..	*Limnæa*, sp. *Planorbis*, sp.? *Physa*, sp.? } The literature of the to name the species
.. ..	.. ..	*Physoptis Africana* (Krauss). Lake Nya
Too immature for the species to be deter-	*Lanistes sinistrorsa* (Lea), one specimen. Ugogo	*Lanistes purpureus* (Jonas). Lagoon, ne *Lanistes ovum* (Peters). Zambesi, Lake *Lanistes Nyassanus* (Dohrn, n. sp.). Pap Nyassa.
.. ..	.. ..	*Paludina polita* (Frauenfold). Lake Ny
.. ..	.. ..	*Paludina bulimoides* (Oliv.). River Rovo that this is the only North African sh
ulata. (Müll.)	*Melania nassa* (Woodward), two specimens. Tanganika	*Melania tuberculata.* Lake Nyassa, Indi
		Melania nodicincta (Dohrn, n. sp.) Pap end of Lake Nyassa.
		Melania Victoriæ (Dohrn, n. sp.) Victori
ata (Phil.) } Well-known Nile shells. (H. Ad.) *lla* (Phil.) }		
i (Fer.) } Well-known Nile shells .. .. *cus* (Caill.) }	*Unio Burtoni* (Woodward). Lake Tanganika.	*Unio Kirkii* (Lea)
H. Ad.) Albert Nyanza resembles U. aferula	*Unio* sp. } Ugogo District; old valves, one specimen of each	*Unio Nyassaensis* (Lea)
Lake Nyassa	*Unio* sp. }	*Unio aferula* (Lea)
ius (H. Ad.). Albert Nyanza	*Unio* sp. }	*Spatha alata* (Lea) } Lake Nyassa
.. ..	.. ..	*Spatha Nyassaensis* (Lea)
.. ..	.. ..	*Spatha modesta* (Lea)
	Pleiodon Spekei (Woodward), one specimen } Tangan- *Lythoglyphus zonatus* (Woodward, two specimens) } ika Lake *Pupa grandis* (Desh.). From a Musjid. Island of Kilwa	
		Ennea lævigata (Dohrn, n. sp.). .. .. *Helix Mozambicensis* (Pfr.). Mozambiqu
		Streptaxis Kirkii (Dohrn, n. sp.). Roc Nyassa. *Cyrena astartina* (Martens). Lake Nyas
or (Oliv.). *la* (Parr).		
Total Twelve.	Total Eleven.	Total Twenty-nine.

." *Vide* 'Proceed- t 1859, with plates.	NYASSA LAKE AND ZAMBESI RIVER. "Livingstone and Kirk." *Vide* 'Proceedings of the Zoological Society, 28th February, 1866, for this complete List.	MOMBAS AND SEYCHELLES. "Baron von der Decken's Expedition." *Vide* Hartl. and Finsch's Work for this complete list.
.. ..	.. ..	*Nanina Mozambicensis*, var. albopicta. *Nanina pyramidea*, n. sp. Mombas.
ka and East Coast	*Bulimus strictus* (Martens) } Under tree-bark, dry *Bulimus catenatus* (Martens) } season. *Bulimus Kirkii* (Dohrn, n. sp.) Mainland, Mozambique.	
Between Tan-	*Achatina Lamarckii* (Pfr.)	*Achatina fulica* (Fer.). Seychelles.
.. ..	*Achatina panthera* (Pfr.). Mozambique and Zambesi ..	
.. ..	*Cyclostomas calcareus.* Near Tete and on Lake Nyassa, &c.	*Cyclostoma pulchrum* (Gray). Seychelles.
	Limnæa Natalensis (Krauss). Lake Nyassa.	
.. ..	*Limnæa*, sp. *Planorbis*, sp.? } The literature of these is not sufficient *Physa*, sp.? } to name the species.	
		Physa Seychellana. Seychelles. *Physa Africana* (Krauss). Zanzibar.
.. ..	*Physoptis Africana* (Krauss). Lake Nyassa	*Physopsis Africana* (Krauss).
Ugogo	*Lanistes purpureus* (Jonas). Lagoon, near Mozambique. *Lanistes ovum* (Peters). Zambesi, Lake Nyassa; large. *Lanistes Nyassanus* (Dohrn, n. sp.). Papyrus roots in Lake Nyassa.	
		Ampullaria adusta (Reeve).
.. ..	*Paludina polita* (Frauenfold). Lake Nyassa.	
.. ..	*Paludina bulimoides* (Oliv.). River Rovooma. Dohrn states that this is the only North African shell in this list.	
Tanganika	*Melania tuberculata.* Lake Nyassa, India, &c.	*Melania tuberculata* (Müll.). Mozambique.
	Melania nodicincta (Dohrn, n. sp.) Papyrus roots. South end of Lake Nyassa. *Melania Victoriæ* (Dohrn, n. sp.) Victoria Falls, Zambesi.	
ika.	*Unio Kirkii* (Lea)	
pecimen of each	*Unio Nyassaensis* (Lea) *Unio aferula* (Lea)	
.. ..	*Spatha alata* (Lea) } Lake Nyassa.	
.. ..	*Spatha Nyassaensis* (Lea)	
.. ..	*Spatha modesta* (Lea)	
Tangan- nens) ika Lake Island of Kilwa		
	Ennea lævigata (Dohrn, n. sp.).	*Ennea minor* (Morelet).
	Helix Mozambicensis (Pfr.). Mozambique, Tete, Nyassa ..	*Helix similaris* (Fer.). Seychelles. *Helix adspersa* (Müll.). Seychelles. *Helix unidentata* (Chemn.). Seychelles.
	Streptaxis Kirkii (Dohrn, n. sp.). Rocky Island in Lake Nyassa. *Cyrena astartina* (Martens). Lake Nyassa, Shire, Zambesi.	
		Helicarion aureofuscus. Mombas. *Buliminus punctatus* (Anton). Zanzibar. *Buliminus rhodotænia.*
	Total Twenty-nine.	Total Sixteen.

ALPHABETICAL LIST OF MARINE SHELLS—*continued.*

NAMES.	Habitat as noted upon the same Species in the British Museum.
Sparella fulva. Swainson	Red Sea.
Strombus floridus. Lamk.	Red Sea, Philippines, and Society Isles.
,, *gibberulus.* Linnæus	Asia, New Zealand, Society Isles.
,, *auris-Dianæ.* Linnæus ..	Asia, Isle of Burias.
,, *lentiginosus.* Linnæus ..	Asia, America, Africa, Santa Cruz, Isle of Luzon.
,, *Mauritianus.* Lamk.	Red Sea.
Tapes tulcaria. Lamk.	
Tellina perna var. } Spengler	Singapore.
,, *ditto* }	
,, *rastellum.* Hanley	East Coast of Africa.
,, *staurella.* Lamk.	Philippine Isles.
Terebra dimidiata. Lamk.	Society Isles.
,, *duplicata var.* Lamk.	Zanzibar.
,, *maculata.* Lamk.	Isle of France.
,, *monilis.* Quoy and Gaimard ..	New Zealand.
Tridacna elongata. Lamk.	Swan River.
Trochus virgatus. Gmel.	Red Sea = Cardinalia virgata. Gray.
Turbinella rhinoceros. Lamk.	No locality in B. M.
Venus puerpera. Linnæus	India, Australia.

VERTEBRATE ANIMALS: FISH.—On the rivers flowing to the east coast of Africa we found the natives wading along their beds, at this season, the 22nd of October, when there is but little water, catching fish, which were got out of holes on the banks or found in detached pools in the river-bed. They struck them with sticks and spears, and had many of them slung round their naked waists, measuring 18 and 20 inches long. The fish were Clarias—mud-fish. In the lake country of Karagweh the people do not fish much; the reigning family of Wahuma never eat them, but knowing we wanted some, the king brought us a living fish—a clarias—in a jar, saying that in another lake there were many different species; and if we wanted more we must have them caught on the sly, by fishermen, as he has a prejudice against any one interfering with the waters of his lakes.

While in Uganda we found that fish is not much eaten, probably because plantains are so numerous, though the king sometimes sent us smoked fish—"Makambara;" but when we reached the Nile and the rivers flowing north, baskets of wicker, made in the form of a champagne-bottle, but 40 inches in height, were constantly found set in passages for fish. These baskets or cruives are laid upon their sides; both ends are open, but the larger end has a funnel of wicker, which allows the fish to enter or to be driven in, but it cannot escape.

Several varieties of fish, sun-dried and ungutted, were sent us in bundles by the king of Unyoro, and one species was recog-

nised by our followers as "Macquareh," scaly, and only 3 inches in length. This fish had been caught by our men in the Shakka Lake, Karagweh.

The following fish have been named, from specimens chiefly, by Dr. A. Günther, of the British Museum:—

Distichodus sp. (?)—Two specimens of this fish were seen on the Nile at 2° N. lat., floating dead down the river, and were eagerly picked up by our boatmen. They were elegant-shaped, scaly fish, reminding us of our salmon, and weighed seven pounds, more or less.

Mormyrus Petersii.—Caught by Speke at Urondogani, near the outlet of the Nile, and the original sketch is in the R. G. S. (size 6 inches, back leathery, scales on the belly, teeth. —J. H. S.).

Mormyrus sp. (?)—Caught at Urondogani, near outlet of the Nile from the lake. Original sketch by Speke in R. G. S.; size 5 to 6 inches. ("Burrumwa," life size, teeth and scales, eyes green. Nile, July 1862.—J. H. S.)

Mormyrus sp. (?)—Caught ditto, ditto. Sketch by Speke in R. G. S.; natural size, 10 inches. ("Teeth and scales; colour a red-yellow, eyes yellow, called 'N'dowe.'" Nile, Urondogani, July 1862.—J. H. S.)

Mormyrus sp. (?)—Same locality. The original sketch by Speke, in the R. G. S., is 9 inches long, and is coloured of a black-blue. (Teeth and scales, N'churu, Urondogani, Nile, July, 1862.—J. H. S.)

"*N'churu.*"—Same locality. Original sketch in R. G. S., 6½ inches long. (Life size, teeth and scales. Nile, Urondogani, July 1862. N'churu.—J. H. S.) But Dr. Günther has not sufficient data to give its generic name.

Chromis sp. (?)—A sketch of this, by Speke, is in R. G. S., but has no note. At Ukuni, on the southern slope of the Equator, unconnected with the Nile, on the 18th July, 1861, I caught what is thought a chromis, three-quarters of a pound in weight; but they attain arm's length, I was told. The same, probably, was caught in an east coast river, and ate very sweet.

Sticklebacks—called by natives "gogo"—were caught in pools of water with the Bagrus at Ukuni, on 17th July, 1861, and on a few other occasions.

Kneria Spekii.—Found in Uzaramo, and mentioned at p. 372, vol. vii., of Dr. Günther's 'Catalogue of Fish.'

Bagrus sp. (?)—At Ukuni, 4° s. lat., this fish was caught in numbers, weighing twelve pounds, in ponds, by our men using hurdles and killing them with sticks. General colour, a pink-brown. It is called "Makambara" by men who had seen it in

Heeao, 10° s. lat.; this native name is also given to a Clarias sp. The Egyptians call cattle "Bagra," which, I am told, is the derivation for the generic name.

Clarias—? anguillaris (Hassely), ? Senegalensis (Val.).—The original sketch by Speke is in R. G. S. ("Samaki Kambari," half size, caught in the Kwaleh Nullah, near Rubuga. —J. H. S.) At 4° s. lat. I caught this by fishing with a bait of cold meat, weight three pounds. The general colour of the back is that of mud, and of the under parts reddish-white. We ate this fish also in Usagara, 6° 7′ s. lat.; it was fat, and tasted like an eel: there were no bad after-effects.

Lepidosiren sp.—At Zanzibar, on the 29th September, 1860, I went on board the ship *Guide* to see Rae, of Livingstone's party, and saw with him a living fish, which he was taking to England as a curiosity. It was a mud fish, or an animal between an eel and a snake in appearance, for its fins, at the ears, were round, and those at the anus were round also. Its tail was ridged above and below with fin, and the length was 2 feet; colour mottled grey, head flat and shark-like: natives said that it eats its own tail. When in Unyoro at 2° N. lat. the king frequently sent us presents of dried fish, and amongst them were this (?) genus, as made out, from my notes, by Dr. Günther, namely:

"24*th October*, 1862.—The king sent us four loads of smoked, black fish (64 of them), each the size of a kippered salmon, but narrower; a stick ran through the centre of each side. They were scaly, and the anal fins—3 inches long—seemed round and tapered. Our men (from Zanzibar) had never seen such fish before, and knew no other name for them but crocodile—'Mamba,' 'N'Gwœna.' Those who had been with Speke at the outlet of the Nile from the Lake, purchased some of the same, but were disgusted on finding that the women of the country refused to cook them; also, the women of Unyoro ran away on being offered them, but the men did not object to eat them." All this made me inquisitive.

"I tried a bit of one; it had been unequally smoked and dried; the tail was hard as a stick, and the shoulders tasteless and leathery: so they were condemned by ourselves and our men. Next day, the 25th of October, after receiving those fish, my journal notes: 'Manua (a native of Unyamezi, one of our faithful followers) calls the round fins at the anus of the dried fish of yesterday the *teats*, for it is a notion of these people that these fish give milk, as they likewise fancy that the crocodile does, therefore they are called "mamba" = crocodile; also, because they have big strong teeth which, in these dried specimens, are very visible.' The eyes seem small, scales shaped so

(sketched in my journal) numerous, flatly rounded, and dotted. Manua added, on my asking him why he should have such a prejudice about not eating them, 'I have not eaten any kind of fish since I was born, and I do not mean to begin by eating these dirty beasts, which have the breasts of women.'"

It is very satisfactory, after ten years, to have this settled; and to find that the specimens given us with so liberal a hand by the king of Unyoro were Lepidosiren, the singular animals placed by different observers, alternately, amongst Fishes and Batrachia.

Frogs.—From the difficulty of carriage, we could make no collection of these; but they were numerous, and noisy in the rainy seasons. The natives use them in their "Fetish," for upon several occasions we have observed frogs tied by the leg at cross roads.

SPEKE'S SNAKES.*

Python Sebæ.

Coronella sp. Killed 8th October, 1860, Uzaramo. Two feet long, head and tail preserved. Two species of the Coronella were found by Kirk in Zambezi-land.

Psammophis sibilans. Found by Kirk in Zambezi-land.

Psammophis sp.

Bucephalus Capensis (Smith). This species was found by Kirk in Zambezi-land.

Ahætulla irregularis. Found by Kirk in Zambezi-land. A *Semivariegata* was also found by Kirk.

Ahætulla Natalensis. Killed 12th October, 1860, Uzaramo. Beautiful pale green.

Ahætulla sp.

Echidna arietans. Killed 19th December, 1860, Ugogo. Two and a half feet long, greatest diameter five inches.

Echidna sp.

Naja haje. N. Mozambica was found by Kirk.

Causus rostratus, n. sp., Ugogo, ten inches long. For description and plate, See 'Proceedings of the Zoological Society,' 8th March, 1864.

Of the above twelve species (few or none of which are from Nile-land), all but seven were found by Dr. Kirk in the Zambezi and Nyassa regions, and are mentioned in the 'Proceedings of the Zoological Society,' of 28th June, 1864.

At Ugogo, and in descending the Nile, we observed water snakes; one, of 5 feet long, came with reared head at our boat, but the oars of our men frightened it away.

During the whole journey, as far as my memory serves me, we never lost a man from, nor saw a case of, snake-poisoning: this is so different to my Indian experience, where so many die annually from snake-bites, and where snakes are more frequently seen than in Africa.

* From the 'Proceedings of the Zoological Society,' 8th March, 1864. By Dr. A. Günther.

LIZARDS.—'Proceedings of the Zoological Society,' March 8, 1864, state that two specimens of Agama, two of Eremias, one of Phelsuma, and one of Eumeces were collected during the expedition, namely,—

Agama aculeata.—Two other Agamas were found by Kirk in Zambezi-land.

Eremias Spekii.—Described as one of three new species by Dr. A. Günther in the 'Annals and Magazine of Natural History' for May, 1872, as having been found by Captain Speke, at 5° 7′ south latitude.

Phelsuma cepedianum.—This species was found by Kirk in Zambezi-land.

Eumeces Afer.—The Tiliqua of the 'Proceedings of the Zoological Society,' March 8, 1864.

Family of Geckoes (?).—A kind of lizard double the size of the ordinary species noticed, was found on the outside of the grass huts on the Nile bank, on November 18, 1862. It was coarsely shaped, had a rough, blotched, black skin; stumpy tail, roughed like a file, with curiously-formed feet, and the head resembling that of a chameleon. It was known to our followers from the east coast.

Lizards.—At Ugogo I went to examine a mass of rock near camp and with my rifle shot two superbly-coloured lizards, 12 inches in length. Their heads and shoulders were pale vermilion colour, and the rest of their bodies a light blue. They were too shattered for preserving.

Two distinct species of gecko lizards were very common in the huts we occupied while at Unyoro; I do not know which were most numerous in these huts, lizards or rats, but they took no notice of each other, for their food is quite different. Both species ran about the ceiling, made of cane and grass; and, of necessity, were as often with their backs downwards as in the natural position. The smallest species had a bright stripe along either side, from the arch of the eye to the tail. The other and larger lizard had a dark back, brightly spotted, with a fish-like yellow belly. Both were very symmetrical, and had smooth skins. It was interesting to observe them chasing each other, or fighting together in circles, trying to bite each other's tails and legs, and giving a severe grip with their teeth; or to see them rush at a red centipede, common in October at Unyoro, the lizard would give the insect a vicious shake as a dog would a rat, and run back to the grass or to the hut, leaving the centipede quite still. On examining the insect, the head was gone, and the body with legs was left entire. These lizards were also seen to feed upon cockroaches, flies, and would pick the bones of a fowl thrown to them.

Chameleons.—A few of these were observed. In Ugogo, on December 7, I saw a pale green one, as thin as a lath, standing stupidly in a field, as if it had just come to life or was in a dormant state. At Zanzibar, on September 1st, caught one ten inches long, on a tree; it was a stupid sleepy reptile, but on being annoyed opened its mouth and emptied its lungs of air.

Crocodiles (Crocodilus).—We had many opportunities of observing them.

In October, on the Kingani river, east coast, which has steep mud banks 15 feet above the river's edge, and tall grass upon them, we saw crocodiles basking, with their red mouths wide open, and their leopard-spotted skins glittering in the sun; the noses were snub, and the animals averaged 12 feet in length.

The tributaries to the Nile at 3¾° N. lat. are full of crocodiles. On January 31, two eggs were brought us, a portion of 99 found under a foot of sand in the bed of a stream. They were larger and longer than the egg of a turkey, but pure white and pointed at both ends, without being larger at one end than another, one-third of one end was an air chamber. The Mahomedan ivory traders from Khartoom ate them, saying they were excellent, but we did not enjoy ours. They also ate the flesh of one killed on January 14, 1863. The natives make necklaces of their teeth.

High up the White Nile, at 5° N. lat., we heard that the crocodile attains a great size, increasing in height as it gets older; some are said to be the height of a dining-table, and 25 feet long. Such do not attack human beings, perhaps they are afraid to; though, every season, accidents occur of men being pulled under the water by crocodiles. At Gondokoro, the natives constantly swim across the great river in company, but they have to yelp like dogs, calling "Ow, ow!" all the while to frighten away the crocodile. I must say that this is very brave, but rather foolhardy of them.

At the junction of the Bahr-Gazelle with the Nile our men found a crocodile's nest, with 77 eggs, all neatly placed, and brought a quantity of them on board, this was on March 10. All were fresh-looking; but I could not be tempted to eat of them, though Speke had half a one, which was so strong-flavoured that the taste could not be got rid of all the evening.

Further down the Nile, where the Egyptian population commences, crocodiles watch for sheep or goats, or even for those who go to the water's edge, and a place for smaller animals to drink at may be seen fenced round, so that no crocodile may attack animals or people taking water. Another precaution is necessary, wells are dug on the sand shore for women to fill their earthen jars.

Sea Turtle.—Chelonia Midas, the green turtle, observed on our voyage out to Zanzibar.

On August 1, 1860, we landed at the coral island of Europa, about lat. 22° S., long. 39° E., to secure some turtle. Four were turned and taken on board ship, where some were kept alive for upwards of twelve days. While on the shore lying on their backs, land-crabs attacked their eyes viciously, and would soon have destroyed them. Their weight averaged 360 lbs.; all were females who had gone to deposit their eggs—August 1—in the sand of the shore. Hundreds of eggs were obtained and were poached; in taste they are the same as those of a fowl, nothing nauseous about them; in shape they are spherical, and are covered with a soft white skin, having a single depression upon it, but not on any particular place. Whenever the ship anchored, the captured turtle were allowed to have a swim, by attaching a rope to them; they enjoyed this, and made antics in the water, coming up to blow every thirty seconds. It is a common belief that these turtle will only die after the sun has set, but this is founded on the fact that cold-blooded animals are more tenacious of life than warm-blooded. If a wire were passed down their spines, Dr. Hardy tells me, this would soon terminate life. The manner of killing them on board ship by the butcher was to hang them by the rear fins, make incisions in the groins and cut their necks all round, allowing them to die after sunset. Their blood was observed by thermometer to be 76° Fahr., two degrees lower than the temperature of the air, and it poured out thick.

At Zanzibar, on the sand shore, the footprints of this turtle were observed.

Land Tortoises.—The shell could be purchased at Zanzibar, in 1860, at the rate of three pounds weight for ten dollars. Four specimens were collected by the expedition. Dr. Gray has kindly given me their names.

Testudo pardalis.—About half grown, and in a good state. (G.)

Kinixys Spekii.—This may only be a bad specimen of *K. Horneana.* (G.)

Pelomedusa sp.—Impossible to determine, but is possibly *P. Gehafiæ.* (G.)

Birds.—Of the following 140 species, 62 of 70 specimens were described from actual specimens by P. L. Sclater, in 'Proceedings of the Zoological Society,' of March 8, 1864; the others were variously identified, by coloured drawings we had with us upon the journey, by 45 drawings we made, and from notes written on the spot from specimens seen. Both of the latter have been approximately named, through the kindness of Mr. Blyth, and I have obtained assistance from the

valuable German work by Hartlaub and Finsch, on the collections of the late much lamented Baron von der Decken.

1. *Podicipidæ,* or grebes, were observed on the Nile to the north of Gondokoro.

2. *Graculus lucidus* (Licht.).—Three of them seen in Unyamezi, January 15, 1861, pluming themselves during a shower while on the rocks of a stream. They took no alarm till my gun arrived, but flapped their wings enjoying the downpour.

3. *Pelicanus sp.*, perhaps *P. minor* (Rüpp.).—Found at Uganda, where the Nile leaves the lake, and all along the Nile to below Gondokoro, where, on February 27, strings of grey pelican—(?) young birds—were flying about our boats. The head of one was brought home.

4. *Sterna sp.*—While descending the Nile at Unyoro, on November 16, we saw many small sterna flitting over the river and darting in their flight at the hippopotami in the river.

5. *Anas flavirostris* (*?*).—In Usui, on November 8, saw two ducks with grey-like plumage and yellow bills, their bodies were small and long.

At Karagweh, in December, flights of duck flew with a rush over our heads down to the lake nightly, when it was too dark to see them.

6. *Sarcidiornis melanotus.*—Towards Gondokoro, on January 16, shot a "nutka" in the rushes; she was black above, grey below, head black and spotted, and without any knob on the nose; swift flight. "This duck is very common all over Unyamezi in the rainy season, frequenting the pools and lakes in considerable flocks."—J. H. S. Coarse eating. Figured by both Speke and Grant in R. G. S.

7. *Plectropterus Rueppellii* (Sclater), 'P. Z. S.,' 1859, p. 132, pl. 153.—"Unyamezi. Found on the lakes, whence it resorts to the rice-fields to feed."—J. H. S. Speke shot four one evening at Mininga, one flew into a tree; gander weighed 9 lbs.; necks the colour of snuff; spurs to the shoulders. Gander has a skin patch on either side of the smallest part of his neck, and a warty skin wattle. A coloured sketch by Speke is in the R. G. S.

8. *Cairina moschata* (Linn.).—"This is the only tame duck of Mininga and Unyamezi generally. It has been introduced by the Arabs."—J. H. S.

9. *Chenalopex Ægyptiaca* (L.).—Speke shot one on the Karagweh Lake, December 19, and gave it to the Sultan, who was much delighted with its lovely plumage.

10. *Dendrocygna viduata* (L.).—Mininga, shot flying, out of a large flock.—J. H. S. A coloured sketch, by Speke, in R. G. S.

11. *Geese.*—Large birds, black and white, were in swarms on the Nile, south of Khartoom, March 18.

12. *Ortygometra nigra* (Gmel.).—Black rail. Uzaramo. Frequents the rice-fields where the present specimen was shot.—J. H. S.

13. *Gallinago sp.*—Saw snipe, November 24, 1860; and at Gondokoro on February 24, 1863, a flight of them passed over us from east to west.

14. *Scopus umbretta* (Gmel.).—The umbrette is very common from the coast to Kazeh, frequenting pools of water and ravines. It stands watching the water like a heron, and flies up into a tree on being disturbed.—J. H. S.

15. *Ciconia Abdimii* (Licht.) = *Abdimia sphenorycha.*—Found feeding in January on caterpillars in a young field of rice, grossly fat, not wild, scarcely any tongue, merely a short thing in the throat, bill red inside, purple cheeks; the feet and the joints of the legs and the skin of the wing-bones are of a red sealing-wax colour; the black plumage is of a shining bottle-green colour, very handsome; expanse of wing 5 feet; curlew walk.

16. *Leptoptilus crumenifer* (Cuv.).—Seen in Unyamezi. The Sultan of Ukuni got me to shoot some, as he wanted their fine feathers. It is the same as the Indian "adjutant."

17. *Otis melanogaster* (Rüpp.).—This floriken was seen occasionally in Unyamezi. It haunts grassy spots in twos and threes, and is rather shy. The example brought home was shot at Urondogani, in Uganda. The irides are yellow; weight, two pounds; length between tips of wings, 3 feet 6 inches; white spots on the wings, by Grant, at Ukuni.—J. H. S. In July at Ukuni, they are fat and fine flavoured, heaviest two and a half pounds. During sunshine they can be more easily approached than in the cool morning. They have a rough gritty call. I rather think that the two following species were seen also.

18. *O. picturata* n. sp., and *O. humilis* of Blyth were both observed. Speke wrote of the latter that "he found it numerous in the interior south of the equator." *Vide* p. 618 of 'Hartlaub and Finsch.' Drawing in R. G. S. by Grant.

19. On December 9 and 10, at Madi, a large bustard rose with the noise of wing and hurried flight peculiar to this tribe, and swept round me, making a majestic curve over the tops of trees, and descending to lower ground near water; again on December 31, a large bustard, with one conspicuous white patch upon the upper surface of its expanded wings, rose heavily, with difficulty gathered up its legs, and after a long flight ceased moving its wings, and descended in a quiet spot. Speke had seen three, and we sallied after them; but were not successful, having bullets in our guns.

20. *Ardea bubulcus* (Savign.).—Seen standing upon the backs of hippopotami on the Nile, north of Gondokoro.

21. *Grus pavonina.*—General colour a slaty black or blue, with brick-red, fibrous yellow feathers in the wings; hackles similar in colour to those of our heron, and the rump is fully covered with beautiful blue down; bill black, mandibles equal; above bill there is a rich black top-knot, behind which a straw-yellow raisable bunch of flat 4-inch long fibres, with a few black featherlets near the roots. Below the eye there is a chalky-white bare patch of skin, the shape of a half-moon, beneath this there is a scarlet wattle. It was shot on April 16, 1861, and allowed me within 30 yards of its tree; when wounded it went away crying like a peacock, and the skin was brought me five days afterwards. Seen also March 18, 1863, on the Nile, south of Khartoom.

22. *Struthio camelus* (L.), called "M'bonee" in Africa, and "Shuter moorg" = camel-fowl, in India. We observed several gangs in Ugogo, but they did not allow a nearer shot than 300 yards. We saw one domesticated at Khartoom for its feathers, which are plucked for the market every time they grow large enough, a cruel arrangement; but this custom is recorded in Captain Lyons's (R.N.) work on North Africa, published fifty years ago, where the natives keep the birds and pluck them three times in two years. Mr. Blyth pointed this out to me, and says the plan which he originally proposed when in Cape Town of giving the birds chloroform before being plucked answers admirably at the Cape, where there are farms for them.

23. *Quail; Coturnix sp.*—Several notes were made upon them. Seen July, October, and December.

24. The Button Quail, *Turnix sp.*, had dark brown plumage and white throat, October 8, 1860. Quail, December 9, 1862, Madi, a solitary quail, its expanded wings were a transparent red colour in the morning light.

25. *Francolinus gariepensis* (Smith).—Partridge: full size of male, only half a pound to three-quarters weight; called "Kew-tee" (Kis.), and nænee (Kin.). It scrapes and scratches the ground, like the bush-turkey, but does not ascend trees. Sketched it 29th August, 1861. Legs, reddish, with one small button-like pearly spur; a plump little bird.

26. *Tree Partridge.*—Full size of female, one pound weight; called "Keecongo." On the 26th August, 1861, found one noosed by the natives; shot another in a tree, 20th December. The plumage is not unlike the Indian black partridge; have a coloured sketch made on the spot.

27. *Francolinus rubricollis* (Rüpp.) (?)—A large, handsome bird; something like the koklas-pheasant of the Himalayas, but with scarlet throat.

28. *Francolinus Cranchii (?)*—The "Qualeh" (African), for it

pronounces this word as distinct as any human being: 25th July, 1860. Weight, 1¼ to 1½ lb.; spur, single, flesh-coloured, blunt; legs, red; a *red* skin is around the eyes, and the whole of the throat; another had a very small second spur. F. Cranchii in Hart. and F. has a yellow throat; native name, "Qualee," from its call. This bird is found in pairs, and breeding in coveys from the coast up to Usui, and is abundant in many places. The throat is yellow; naked space round the eyes bright red.—J. H. S.

29. The "*Booee*" (African) is similar to the above in size. Its call is "cockcock, cocok," and "chick-a-chick," &c., reminding me by its plumage of the "Cheer" pheasant of the Himalayas. In running they throw their legs very forward, and their bodies ludicrously far back. Two cocks weighed each 1½ lb., had orange-red legs and the same colour of skin around the eyes and on the throats; one had two spurs on each leg. General colour of plumage, grey-like. Seen only at Usui in November.

30. *Francolinus gutturalis* (Rüpp.).—"All over Unyamezi."—J. H. S.

31. *Francolinus Grantii* (Hartl.).—"This francolin is found all over the forests of Unyamezi. I found young birds on the 20th February near Kazeh, in company with the mother."—J. H. S. See Fig. in 'Proceedings of the Zoological Society,' 1865, p. 665, pl. 39, described at p. 589 of Hartl. and Finsch, from our specimen in the Bremen Museum.

32. *Pterocles decoratus* (Cab.).—Sand-grouse were seen in Ugogo and Unyamezi (27th November, 1860), where this specimen was obtained.—J. H. S.

33. *Numida coronata* (G. R. Gray).—Native name, "Kanga." Uzaramo, and all along our route to Gondokoro, in flocks of twenty to forty. This guinea-fowl afforded us a constant supply of food when meat was scarce. In Unyamezi, or wherever the sweet potato was growing, they were abundant, roosting in trees at night. At Karagweh, on 10th April, their eggs were brought me. In July, at Ukuni, the young chicks were about fifty in one batch.

34. *Numida Granti* (D. G. Elliot).—Rare; seen only in Ugogo. Weight about 3 lbs., whereas the common guinea-fowl weigh up to 3½ lbs. It was remarked that this bird had a peculiarly-shaped "merry-thought," affecting, I am told by Mr. Elliot, its peculiarly crane-like call, and that its top-knot and purple skin about the head was quite new; the loose skin of the neck resembles the fashion of a stand-up collar, and the back of the head is bald. Its plumage and form differ from the above species. It has been named from a coloured drawing, and

description by Grant (*vide* Elliot's magnificent work, 'Family of Pheasants,' Part IV., for life-size coloured drawing). Shot on the 8th December, 1860. Two or three were together in the jungle, away from cultivation; native name, "Kiroro."

35. *Gallus ferrugineus*, domestic fowl, was not uncommon, and could generally be purchased; it was the common, and not the game breed. A barbarous custom of cutting their nails off is practised at Zanzibar and Karagweh, to prevent their scratching up grain; some are quite crippled by it, and have to lie down. Another strange custom the Waganda have with fowls is that, in ferrying a river where there are hippopotami, no live fowls are permitted in the canoe. Neither pea-fowl nor turkeys exist in the parts we traversed.

36. Pigeon were seen domesticated in some of the Unyamezi villages; they were of various colours, with flesh-coloured legs, as far as my memory goes.

37. *Treron Delalandii; the green Madagascar pigeon.*—A handsome, plump bird; was often shot towards the coast while feeding upon wild figs, or it was found in Uganda, where the king sent us one he had shot, to be sketched for him. "Uzaramo, and all along our route to the north, in large flocks, affording good food."—J. H. S.

38. *Treron nudirostris* (Sw.).—'Proceedings of the Zoological Society,' 21st April, 1863, Central Africa.

39. *Columba Guineensis* (?) (Briss).—"Triangular spotted pigeon." "Shot at Kazeh and Mininga, but not observed anywhere else during the journey; seen in flocks in palm-groves of Mininga."—J. H. S. A beautiful, plump bird, but not good eating. A sketch by Speke is in the R. G. S. The feathers of the crop are forked, elbows and shoulders chocolate colour; tail black, with *one bar of white across it.* Around the eye the wattle is large and red; the rump, first joint of wing, and under the wing, is blue. Bill black, but white at base. Salt's 'Abyssinia' states that this species is domesticated, but this we nowhere observed; rather the reverse, for it is a shy bird.

40. *Chalcopelia chalcospilos* (Sw.).—"Obtained at Duthumi."—J. H. S. This, in Hartl. and Finsch, is under C. Afra, the African turtle-dove.

41. *Chalcopelia Afra* (Linn.).—Speke's note, on the figure by Wolf of this, says, "Reddish-purple legs, forehead lighter, but gradually merging to the same colour as the back, continuously down back of neck. These feathers should be generally lightened by a tipping of fruit-red. Rump brown, like the back, but separated from it by two strong bands of black, and one intermediate white, occupying a space of three-quarters of an inch. Unyamezi bird is one quarter longer than Wolf's picture."—J. H. S.

42. *Peristera tympanistria* (Temm.).—A small dove with dark-brown back and white breast, or, perhaps, dark-brown bars upon its back.

43. *Œna Capensis* (?).—On 25th June, 1861, shot a black dove with a white bar under its tail.

44. *Turtur capicola* (Sundev.).—Very common on the route from the coast to Kazeh, thence to Gondokoro.—J. H. S.

45. *Picus (Dendrobates) Schoensis* (Mas.) Rüpp.—"This bird was shot in Bogweh."—J. H. S. See Speke's note on it in the R. G. S.

46. *Zanclostomus æneus* (Vieill.).—"Uzaramo."—J. H. S.

47. *Pogonorynchus torquatus* (Dumont).—"Uzaramo. Found on the upper branches of the highest trees."—J. H. S.

48. *Pionias fuscicapillus* (Verr.).—Very common in flocks. Uzaramo and interior plateaus. The specimen preserved was a female. Irides dirty-white.—J. H. S.

49. *Pionias rufiventris* (Rüpp.).—6° s. lat.

50. Parrots and parrokeets were uncommon.

51. *Buceros flavirostris* (Rüpp.).—6°–7° s. lat.—J. H. S.

52. *Buceros nasutus* (L.).—A young bird of this, shot in Uzaramo, is in Bremen Museum.

53. *Buceros melanoleucus* (Licht.).

54. *Buceros cristatus* (Rüpp.).—Only seen in Uganda, where it flies about in small flocks from tree to tree, making a very loud, harsh noise.

55. *Buceros sp.*—Saw two large hornbills on the 2nd November, 1860.

56. *Buceros sp.*—Shot by Speke in Unyoro. Body as large as an "adjutant;" three equal toes, and legs short; awkward, waddling walk; several feeding on cultivated ground after the sun had set. Plumage black; primaries white; the feathers of the neck and chest stand out like hairs, not lying flat like its other feathers; bill black, with a helmet surmounting its base; eyes very large; tail compressed laterally.

57. *Tmetoceros Abyssinicus* (Gmel.).—Unyoro. This hornbill is found in flocks of four or five feeding on the ground. When disturbed, they fly into trees. I saw them also in Madi.—J. H. S. At Madi, 26th August, saw three, very shy, taking short, languid flights.

58. *Schizorhis leucogaster* (Rüpp.).—"This Touraco is rather common in the hilly country of Usagara, as also in Somali-land, where I found it amongst thorny acacias in flocks of four and five."—J. H. S.

59. *Corythaix musophagus* (?) (Dubois).—Seen near the East coast, 25th October, where plantain and mango-tasting fruits were growing. Wings, port-wine colour; its top-knot was

raisable. Wild, flying from lower to higher branches, and then flying away, always keeping a sharp look-out.

60. *Colius striatus* (Gmel.).—Uzaramo. Also seen and shot at Usui. It is found in small flocks, frequenting the thickest bushes.—J. H. S.

61. *Passer Swainsoni* (Rüpp.).—Unyamezi and Karagweh. Frequents the villages like our house-sparrow.—J. H. S.

62. *Passer sp.* (*?*).—A coloured sketch of this by Grant is in the R. G. S., as one of four small Karagweh birds.

63. *Passer.*—In the R. G. S. there are three other coloured drawings by Speke of two undeterminable Karagweh, and one Unyoro sparrow.

64. *Amadina* (*?*).—On the 19th March, when sailing down the Nile to Khartoom, between swamp vegetation, I fancied seeing a distant range of hills; but the form changed and swayed about, and turned out to be a dense cloud of finches, covering a tenth of the horizon—a marvellous delusion. Again, when sailing at night through a narrow channel, we disturbed finches roosting upon the tall reeds of the banks; a flight of Amadina (?) took to wing, and, in the dark, I thought it was the noise of wind coming to strike our boat; it sounded as if coming through a forest of fir-trees; but, as no wind reached us, our boatmen assured me the noise was caused by a myriad mass of finches which we could not see. And so it was. I saw the same thing in Algiers, December 1873.

65. *Amadina sp.*—A coloured drawing by Speke in R. G. S.

66. *Amadina sp.*—A coloured drawing by Speke in R. G. S.

67. *Pytelia phœnicotis* (Sw.)—Unyamezi. Found in small flocks in the milk-bushes (Euphorbias) that, in some places, fence the villages. It is generally distributed in Unyamezi.—J. H. S.

68. *Pytelia* (Estrelda) *minima* (Vieill.).—Unyamezi. Found in flocks in company with Hypochera nitens, in the villages.—J. H. S.

69. *Pytelia sp.*—A coloured drawing is in R. G. S. of Estrelda sp., noted. "Irides red; Karagweh."—J. H. S.

70. *Spermestes cucullata* (Sw.).—Unyamezi. Found amongst the Euphorbias which fence round about some villages.—J. H. S.

71. *Hypochera nitens* (Gml.).—Unyamezi. Glossy finch; common in the villages, where it feeds in the dirty lanes, and from heaps of dirt.—J. H. S. A coloured drawing by Speke in R. G. S.

72. *Soldier Finch and his Wife.*—Unyamezi.—J. H. S. Coloured sketch of both by Speke in R. G. S.

73. *Golden-tippet Finch.*—Shot at Mininga, 1861. Irides dark.—J. H. S. A coloured drawing by Speke is in R. G. S.

74. *Dark Finch.*—Unyamezi.—J. H. S. Coloured sketch in R. G. S.

75. *Speckle Breast.*—"Unyamezi."—J. H. S. Coloured sketch by Speke in R. G. S.

76. *Red Chops.*—"Unyamezi."—J. H. S. Coloured sketch by Speke in R. G. S.

77. *Vidua principalis* (L.).—The Widah bunting; locality not given.

78. *Vidua Verreauxi* (Cass.)—Mininga and Unyamezi. Flies about from the tops of the acacias.—J. H. S. Its flight is peculiar, from having to carry its long, curiously-formed tail. At starting it flies horizontally, and as steady as a railway-train. If ascending, it does so perpendicularly, and, before alighting, it descends almost head first, dipping and dipping gracefully, the tail waving about, and perches upon a high tree. A coloured drawing of male and female by Speke (of this species ?) is in R. G. S., as one of four Karagweh birds.

79. *Penthetria eques* (Hartl.) = *Vidua eques.* Shot at Mininga. Seen in twos and threes among corn and long grass. For plate, see 'Proceedings of the Zoological Society,' p. 106, 1863.

80. *Penthetria macroura* (Gmel.).—Found in same locality as last, and has the same habit.—J. H. S.

81. *Pyromelana franciscana* (Isert.). — Unyoro. Found in large flocks in the corn-fields (*Holcus Sorghum*).—J. H. S.

82. *Pyromelana Capensis* (L.) = *Euplectes xanthomelas,* (Rüpp). On Wolf's figure Speke remarks, "Same shot in Karagweh, head ruffed up, eye very dark, bill shorter, legs darker, wings blacker, and yellow continued to back like a tippet; down centre of breast a narrow line of straw-white feathers; otherwise Wolf's drawing is very good."—J. H. S.

83. *Pyromelana flammiceps* (Sws.)—Meeninga. Flies about in large flocks, feeding in the corn-fields, and roosting at night in the rushes of swamps.—J. H. S.

84. *Ploceus sp.* (Uzaramo).—Making their nests 14th October, hanging them from the trees as thick as apples, and overhanging the river.

85. *Hyphantornis Abyssinicus* (Gmel.).—Uzaramo.—J. H. S.

86. *Textor Dienemelli* (Horsf.).—Speke's specimen is in the Bremen Museum. His notes in the Royal Geographical Society on it say, "Same bird as Wolf's shot at Tura, but with blacker feathers on the wings, and slightly larger bill; also more red on the wings."—J. H. S. Goes about in small flocks.

87. *Notauges superbus* (Rüpp.).—Shot this in Somaliland; also at 6° to 7° s. lat.; but here the irides are white.—J. H. S.

88. *Lamprotornis sp.*—"The green species, golden or orange-eyed. Unyamezi."—J. H. S.

89. *Buphaga erythrorhyncha* (Stanley). Seen on the backs of cattle picking off insects, Ugogo. Known to our Cape Mounted Rifles; a pretty bird, with painted bill.

90. *Lamprocolius melanogaster* (Sws.).—Unyamezi. Eyes snow-white. Wolf's drawing is good, but only 7–12.—J. H. S.

91. *Corvus affinis* (Rüpp.).—Seen at Madi, 3° N.

92. *Corvus scapulatus* (?) (Dand.).—Seen at Karagweh, 12th April, 1862, two or three together. People complain of their being destructive to grain. The Sultan requested that one might be shot for him, as he wanted to perform some ceremony.

93. *Archicorax crassirostris.*—Shot November, 1860, near coast.

94. *Prionops poliocephalus* (Stanley).—Usui. Found in the small bushes.—J. H. S.

95. *Meristes olivaceus* (Vieill.).—Uzaramo. Shot by Captain Grant. Irides reddish-yellow. Found single in the bush; has a single note with a hollow sound.—J. H. S.

96. *Dryoscopus* or *Laniarius funebris* (Hartl.).—Described as a new species in the 'Proceedings of the Zoological Society,' 1863, p. 105. Captain Speke describes this as the black, "metal-toned whistler," from Mininga, and figures it in the Royal Geographical Society.

97. *Laniarius* or *Dryoscopus hamatus* (Hartl.).—'Proceedings of the Zoological Society,' 1863, p. 106. Unyamezi. Found in detached bushes.—J. H. S.

98. *Urolestes melanoleucus* (Jardine).—'Proceedings of the Zoological Society,' 1863, p. 106. Shot at Bogue; seen in small flocks. The present specimen shot while sitting upon the village palisade.—J. H. S.

99. *Dicrurus divaricatus* (Licht.).—King-crows were rather common all over Unyamezi and Uzaramo, resembling in their habits the well-known D. macrocercus of India.—J. H. S.

100. *Terpsiphone mutata* (Linné) = *Tschitrea Spekii* (Hartl.).—Mutable fly-catcher, observed in Unyamezi, Uzinza, and Uganda.—J. H. S.

101. *Muscicapa cinereola* (Hartl. and Finsch).—Uzaramo; the Butalis sp. (?) of the 'Proceedings of the Zoological Society,' 1863.

102. *Pycnonotus nigricans* (Vieill.) = *Ixos sp.*—The bulbul of Unyamezi, found all over the country, and well known as a songster.—J. H. S. A coloured drawing by Speke, in R. G. S.

103. *Oriolus monachus* (Gmel.).—Nun-thrush, common in Uzinza. Irides red; brought home one example.—J. H. S.

104. *Crateropus Jardinii* (Smith).—Shot in Bogue, where I saw it flying about in flocks of ten and twenty in the forest. Rather pugnacious in disposition.—J. H. S.

105. *Crateropus sp.* (?)—A coloured drawing by Speke, in

R. G. S. "Golden-eyed penny trumpeter," Unyamwezi forests. —J. H. S.

106. *Megalurus* (?).—A small dark-brown bird: long tail, and tough leathery skin, like that of a mouse, and hair-like feathers; enormous anus, feet very soft and the colour of a red radish; bill stout, strong, and black. Found in the rushes, and called "M'Lindah." Has many birds following him. They are said to pick up all the feathers falling from his wings and to tear them up, to prevent natives tying them upon their arrows.

107. *Cichladusa arquata* (Peters) = *Bradyornis Spekii* (Hartl.). —Kazeh. The "morning warbler," as I named this species, was met with at Mininga. It came about our tents in the morning and delighted us with its cheerful song, being the sweetest singing bird we met with.—J. H. S. A coloured drawing by Speke in R. G. S.

108. *Cossypha* (*Bessonornis*) *semirufa* (Rüpp.).—This bird was seen in Karagweh and Usui.—J. H. S.

109. *Motacilla flava* (Linn.).—Yellow wagtail. Unyamezi.

110. *Motacilla vidua* (Sundev).—Unyamezi.

111. *Pratincola torquata*.—Stonechat. Speke's note in Wolf's drawing states: "Uzinza bird. Eye dark, feathers of the back are tipped like *Saxicola albofasciata*, and all red—the same colour as Wolf's figure."—J. H. S. Drawing by Speke, in R. G. S.

112. *Saxicola albofasciata*.—Shot in Usui. Same size as Wolf's figure, but with white extending from junction of head down sides of neck to the white belly; legs brown, but no tippings on the back.—J. H. S.

113. *Nectarinia Habessinica*.—Found at Inenge.—J. H. S.

114. *Nectarinia cruentata* (Rüp.).—Karagweh and Unyamezi. —J. H. S. Coloured sketch in R. G. S.

115. *Nectarinia famosa*.—Named from a coloured drawing by Speke, in Royal Geographical Society. Karagweh.—J. H. S. The sketch is of a metallic green colour.

116. *Irrisor cyanomelas* (Vieill.).—Uzaramo.

117. *Merops erythropterus* (Gml.), = *minutus* (Vieill.).—Red-winged bee-eater. Shot at Mininga.—J. H. S. A coloured drawing, by Speke, of this "sunny flycatcher," is in the R. G. S.

118. *Merops sp.*—Green bee-eater. Seen 19th February at Gondokoro, where it has its nest in holes made in the perpendicular clay bank of the Nile. It takes short flights from the holes, alights upon the bank, and is off again. The rump is a circle of green, its head seems of this colour also; the rest of the plumage is of a blood scarlet, brightest at the neck; wings very pointed, tail squared, with two (?) long feathers from its centre. Not met with before this locality.

119. *Halcyon Senegalensis* (Linn.).—Mininga. Shot sitting on a tree over a brook.—J. H. S. The crab-eating kingfisher of East and West Africa. Coloured drawing, by Speke, in R. G. S.

120. *Halcyon Chelicuti* (Stanley), or *Chelicutensis*.—Bogue; found in the forest.—J. H. S.

121. *Coracias caudata* (Vieill.).—Bogue, in Uzinza.

122. *Coracias sp.*—Shot near the coast.

123. *Eurystomus Afer* (Lath.).—Uzaramo. Shot October 7, 1860, a female, with eggs partially developed. Irides dark brown.—J. H. S.

124. *Hirundo rustica* (?) (Linn.).—Saw one on the East coast, 23rd October, 1860.

125. *Psalidoprocne albiceps* (Sclat.).—Captain Speke brought home this new species from Uzinza.—Plate xiv. in the 'Proceedings of the Zoological Society,' 1864.

126. *Cecropis melanocrissus* (Rüpp.).—Shot in Usui.—J. H. S.

127. *Cecropis puella* (Rüpp.).—Unyamezi swallow.—J. H. S.

128. *Cosmetornis vexillarius* (Gould).—"This specimen was shot flying after dark in Uganda. At Urondogani others were seen often alighting upon the bare ground or cleared patches near villages, whence they flew when disturbed. This bird was well known to my servant 'Bombay,' who said it was very common in Uhiyao 8° s. lat."—J. H. S. *Vide* Plate at p. 462 of Speke's 'Journal,' &c., where it is named *C. Spekii*.

129. *Bubo sp.*, probably *B. lacteus* (Temn.).—Camp Kari, by J. A. G. Brown wings, barred with speckly white.—J. H. S. Coloured sketch, by Grant, in R. G. S. Weight 9 lbs.

130. *Falco semitorquatus* (A. Smith).—Shot in Bogue while sitting in a tree.—J. H. S.

131. *Falco tanypterus* (Licht.).—Unyamezi. One example, irides yellow. Shot at Kazeh by myself.—J. H. S.

132. *Milvus Forskali* (Gml.).—Seen frequently on the journey; once particularly at Madi, 18th January, chasing a crow.

133. *Asturinula monogrammica* (Temn.).—Red-nosed falcon; irides yellow. Shot at Kazeh by myself, after it had just devoured a small lizard.—J. H. S.

134. *Helotarsus ecaudatus* (Daud.).—Frequently observed at Madi.

135. *Spizaetus bellicosus* (?) (Daud.).—Observed near the coast.

136. *Heliäetus vocifer* (Daud.).—Saw this splendid bird on the Nile, 18th March, 1863.

137. *Pandion haliäetus* (?) (Linn.).—On the Nile north of Gondokoro.

138. *Vultur occipitalis* (?).—This is called the "M'sæga," which feeds upon the human victims of the king of Uganda.

It is the smallest of the three vultures observed, and is a dirty ragged bird, with dull sepia plumage and white ruff to the chest.

139. *Vultur auricularis* (?).—This most resembles the king vulture. He is a handsome large bird, with nearly black plumage, but white on the rear half of his wings, on his rump, on his breeches, and a black ruff extending from the back of his head, and naked throat. Rüppell's fig. in birds of *V. occipitalis* comes nearer the bird than any figure I have seen.

140. *Vultur fulvus* (?) (Gmel.).—Called the "M'foongoo" (Kis.). A very bold and common bird on the route.

Mammals.—Thirty-nine of the following seventy-five species were mentioned in the 'Proceedings of the Zoological Society,' by P. L. Sclater, 8th March, 1864, from specimens sent home by the expedition. The others have been determined approximately by competent authorities from drawings and notes made from specimens on the spot, as it was quite impossible for us to carry what we shot along with us.

1. *Elephas Africanus.*—Native name "Thembo." Met with from the east coast to Gondokoro, but principally in Unyoro during November and December. At Ugogo we found a sporting race—the Mukooa—from 8° s. lat., engaged in shooting elephants for their ivory. In Central Africa the natives will not venture near them, never capture them to utilise the sagacious animals, but wantonly kill females as well as males by pit-falls or traps, having a spear attached to a log. This is suspended from a tree, and falls on the animal should he let off the trap. The traders on the White Nile send large armed parties as far as the Unyoro frontier to collect ivory by bartering with beads, iron hoes, cloth, and cattle; but they are said to shoot the wild elephant.

The quality of the ivory seems to vary with the pasture and moisture, and its value increases with its size. In Unyoro the herds of female elephants, forty or more, had long small uniform tusks, useful for billiard balls, but which fetch little in comparison to the heavy tusks seen in the market at Zanzibar, where, in 1860, they brought 16*s.* per lb., and might have been purchased for a quarter of this in the interior, or at the rate of 30 dollars for 36 lbs. All the wild elephants seen by me in Africa struck me as being of a smaller type than those domesticated commissariat elephants I am familiar with in India.

2. *Hippopotamus amphibius* (Linn.).—Native name Keeboko. Speke shot one September, 1860, on the main land of Africa, opposite Zanzibar, in a tidal river. In December, at Karagweh Lake, the boatmen brought this animal within shot by making a peculiar noise; but they said none could be killed unless a

cow was presented to the god of the island in the lake. In May, on the shores of the Victoria Nyanza, we heard the trombone call of the hippopotamus, and saw its dried flesh in the huts of the people. When crossing the Katonga River we were ordered to kill the live fowls we had, for fear the hippopotamus would capsize the canoe. They were constantly seen in the Nile, where the natives harpoon them and capture them in traps. On the 27th February, 1863, while sailing through the Berri country, I counted a herd of twenty-two, their bodies as close as they could pack, frolicking about, spouting, dipping, snorting, and rearing their necks and shoulders out of the water. May this not be the breeding season? All ducked at 80 yards from us. I saw several packs besides this one, followed by terns and umbrettes.

3. *Rhinoceros bicornis* (Linn.).—Native name "Faroo." This was found on the route between Ugogo and Karagweh. Its horn is of no value; we never took the trouble to cut it off the animal, as we could not carry it. Speke shot the first by moonlight at Ugogo; our men had difficulty in procuring any of the flesh, as the natives ate every bit of it. One bullet, if placed behind the shoulder, was found to be enough. They were frequently observed to have died in the posture of a hare, seated in her form. We have seen during a march in Usui as many as eight or ten feeding separately in the valley, with hartebeest and other antelopes about them; but as our men became tired of their flesh, we seldom wasted powder on them. In such open ground they will allow a person within 100 yards without alarm, receive the bullet, and rarely charge when wounded. They trot off with cocked tails out of sight, and never were observed to canter; but, in cover, they have frequently made feints at charging.

4. *Rhinoceros simus* (Burchell). — "The white two-horned rhinoceros is found in Karagweh, where several specimens were shot. It is larger than the bicornis."—J. H. S. The enormous length of the first horn, the flat and non-prehensile upper lip, and the difference in the skin, distinguish this animal at once; but it was rare in comparison to the other. At Delagoa Bay we saw a horn upwards of a yard in length.

5. *Phacochærus Æliani* (Rüpp.).—The native name of "the pig" is "N'grooweb," "N'geeree," and the boar is called "Toomba." We saw several species, but this wart-hog has been identified by the skulls of both sexes which we sent home. They are as swift on foot as an Arab horse, and dart away with their straight tails erect. The females have immense tusks also.

6. We observed the red hog as well as the grey grizzly one. The pig was not domesticated on any portion of our route, whereas it is so mentioned in Dr. Livingstone's account (dated

February, 1872) of the Manyema country, on the Lualaba, at 4° S. lat., and about 25°-26° E. long.

7. *Hyrax.*—At Ukuni, in August, shot two young hyrax. Also saw in rocky ground a number of them three times the size of our hare. One specimen brought me at Ukuni was rabbit-coloured, rather rat-headed, hare size, feet-pads like a mitten, with nails like monkeys. The natives would not sell me this specimen, nor allow me to skin it. They were to eat it themselves, and keep the skin.

8. *Horse.*—It may be mentioned as strange that there is not a horse in the whole range of country we traversed, although we know they are used by the Galla and other tribes to the north-east of Victoria Nyanza. One had been taken from the East coast by an Arab, as far as Uganda, but he died like all the mules brought by us from the Cape of Good Hope. They die, I believe, from want of proper food and care.

9. *Ass.*—"Phoonda." There is a wild species in the Nubian desert, but we did not see any, and a river is called, after them, "Wadi Himar," the River of the Wild Ass, at 18½° N. lat. The animals we took with us from Zanzibar stood the journey pretty well; one of them had been with Burton and Speke in the Tanganika journey, but was brutally killed by the natives upon our journey. During the march we have seen the wild zebra and our laden donkeys recognise each other. The twelve mules we took with us from the Cape all died from disease before reaching Kazeh; they were not so hardy as the donkeys. On the march they had to be urged on, and the symptoms of sickness were closed eyes, distended nostrils and windpipes, weakness in the limbs, distressed breathing through the mouth, accompanied by a hard round swollen tongue, their blood turned into water, which oozed from the pores of the skin and from the tail, when we cut it, in order to try and relieve them by bleeding. But all remedies failed.

10. *Equus zebra* (?).—Native name "Phoonda." This animal was frequent in Ugogo, Unyamezi, and north of Uganda. He differs from the Equus Burchelli of Regent's Park Gardens in being larger and differently striped. The stripes of our zebra were black, upon white (not yellow) ground, and extended to the hoofs, whereas Burchelli has broader stripes, yellow ground, and the stripes on the legs are few. However, a sketch of an old mare shot by me shows the same black muzzle and hog mane as Burchelli, and Mr. Blyth says my sketch is of this last species. Foals were running after their mothers in December. We heard them calling, and the note was like that of a bird, with the addition of the rough notes of the donkey's bray. We and our men ate their flesh and sun-dried it; but it was very horsey-tasting and

smelling. The natives invariably stole the testicles of all animals, for they thought there was a virtue in eating them.

11. *Camels.*—There are a few sickly-looking Arabian camels, or dromedaries, on the island of Zanzibar, where they may be seen turning oil and flour mills; but from the east coast, all the way north to Goudokoro, there is not one kept in the country, though the greater part of it is perfectly suited for this animal. I therefore hope that he may be introduced early by future explorers, for the giraffe thrives there, and the Nubians, the Abyssinians, and Somal have this animal in thousands; and he is just the animal for an African, as he requires little care, keeping himself; besides which, in a country where the traveller is detained months for want of porters, this animal, as a beast of burden, would be invaluable to him.

12. *Camelopardalis giraffa.*—Native name "Tweega." Troops of this wild creature were met with at various points of the journey wherever the forest was flat, dry, tolerably open, and wooded with acacias. One full-sized male, with two stumps of horns, was shot with one small Lancaster bullet. They were seen most frequently during the months of November and December. Every morsel of the animal was eaten by our native porters, and the skin was made by some into sandals. The long straight hair at the tip of the tail is valued for stringing Venetian beads, and iron wire is twined round the hair to form necklaces and anklets.

13. *Ariel* were seen at 18-19° N. lat., in small herds of five and six, on the sandy desert, where nothing green was visible.

14. *Gazella Granti* (Victor Brooke).—For figure and description *vide* 'Proceedings of the Zoological Society,' 16th April, 1872. Speke shot male and female on the 30th of November, in Ugogo, and we both sketched them as new species. They were shot again in the same locality—a sandy plateau, covered with salt plants, bushes, and a few trees—seen in small herds. Fur a dirty yellow above and white beneath, pointed ears, black patch on bone of nose. Male horns 26 inches long; females 15 inches.

15. *Tragelaphus sylvaticus* (Sparm).—The head of a young male. "The bush-bok frequents the thick bushes in the countries we traversed, from Unyamezi to Madi. It is usually found singly, and makes a bark when suddenly disturbed."—J. H. S.

16. *Tragelaphus sp.*—Native name, "Phongo;" but in Uganda it is called "N'gubbi." Ukuni, 4° s. lat. Killed with shot a hornless female antelope. Fur of the lightest bay or red colour; weight, a man's load, say 60 to 70 lbs.; hornless, and with four teats; head lean, ears large and rounded; four scars of white across its saddle part; white spots, more or less in lines upon its sides; tail a large tuft, bright bay above, white beneath, and

ending dark. The legs, particularly the fore ones, were patched inside with white; feet very beautiful; a patch of white is on the skin above the front of the hoofs, and this specimen had a white patch in front above his chest on the windpipe, and a collar of hair had been rubbed off all round its throat; ridge of the spine white. It proved a heavy load for my guide, as it was in young. The male of this species has a horn of 12 inches long; three-cornered with half a turn outwards, and slightly barred.

"I was delighted to get it, as my larder was completely empty; but it was not fated that I should enjoy it. My guide refused to carry it into the village where I lived till he had obtained permission from the Sultan, because it was an unwholesome animal—a beast, that if he spits at you the place becomes a sore, and if you eat it, your fingers and toes drop off from leprosy—you will have scab. In fact, it was a 'Phongo' (Kin.), and the Sultan would not allow even its skin within the palisade. I therefore made a careful sketch, and these notes upon it; but some travellers passed during the day and took away the meat. In Heeao this animal is called 'Bawala,' and it is not eaten there either." It would be interesting to know what cause there is for this native superstition.

17. *Tragelaphus Spekii, sp. nov.*, pl. XII., 'Proceedings of the Zoological Society,' 1864, and plate also in Speke's 'Journal of the Discovery of the Source of the Nile.'—This antelope frequents the beds of papyrus in the borders of the lakes of Karagweh. King Rumanika, of Karagweh, ordered his boatmen to catch me a specimen. They procured me a young male alive, the skin of which I brought home. I kept him some days alive, feeding him on papyrus-tops, the only thing he would eat. He was very awkward on the hard ground, his long toes being evidently only adapted to carry him among the swamps. The king also gave me the horns of an adult of this antelope (which are, I believe, in the British Museum). The skins of this animal are highly prized in Karagweh, Uganda, and Unyoro, and are worn by the kings and their officers.—J. H. S.

Before reaching the Lake of Karagweh, where this animal was found, the natives of Kazeh told us of it, describing it as living in water like a fish, having horns and long hair like a goat, and we had difficulty in making out what animal it could be. This specimen is now stuffed in the British Museum. Native name, "Nzoweh."

18. *Neotragus Saltianus*.—The figure of this species in Rüppell has spotted legs, but this character was not observed in the specimens shot. My notes state,—"November 18, 7° s. lat. Shot an old female hornless antelope, weighing eleven pounds—native name, 'Soo-eea,'—deer colour, white beneath, four teats,

short tail, and a tuft of long erect hair on the forehead (my sketch is the same as Rüppel's). It squeaked very much in being knocked over with shot. It had a companion." Again journal of 18th December: "Shot a male Saltiana with three-inch long horn; I forgot to take out his testicles, so the meat smelt of musk."

19. *Calotragus sp.*—Thought by Speke to be *C. melanotis* (Thunb.); native name, "M'Kosseh." My journal states,—"October 22nd, 2½° S. lat. Shot a small buck antelope, with red fur mixed with grey hair; horns two inches long, small, smooth, and pointed; weight sixteen pounds. The chief of the place requested to have its skin; he got it, and a fore quarter besides."

20. *Nesotragus moschatus* (Von Duben).—Specimens of this little antelope were obtained by Captain Speke in the island of Zanzibar; these are now in the British Museum.

21. *Scopophorus montanus* (Rüpp.).—Karagweh. Imperfect head of male. Shot on the mountains in Karagweh, where it is not very common, moving about in small herds.—J. H. S.

Sketch of its horn by Speke is in R. G. S., "male horn; Karagweh."

22. *Heleotragus reduncus* (Pall.). — Captain Grant shot the only example of this antelope we obtained, in Usagara.—J. H. S. Shot this Reh-bok November 4. He was one of seven or eight. Sketch of head in R. G. S.

23. *Cephalopus mergens* (Duyker bok). Sketches and long notes on male and female in R. G. S. by Speke. Shot.—J. H. S.

24. *Kobus leucotis* (Licht. et Pet.).—Uganda 1° N. lat. Three heads in British Museum where it is also called *Adenota leucotis.* This antelope, of which the native name is "Nsunna," is found in Uganda, Ungoro, and Madi, but never south of those countries. They roam about in large herds in thick bush and grassy plains, but never go far from water.—J. H. S. Speke's male specimen is in the British Museum.

I consider this one of the most beautiful of antelopes. Its fur is a bright bay. Several were shot, and afforded great excitement to the Waganda, as the skin is so much prized. Most of them were shot while grazing in aquatic vegetation, and we had to wade up to our knees to get them. One fine buck, killed on August 22 (and another on the 16th, with 13½-inch-long horns), was carried by eight men (Waganda) bodily out of the water, so that no hair of his skin should be spoiled. Their chief was to have the skin. A hornless female, in young (July 14), was shot in same locality, at 1½° N. lat. This animal is larger than the Indian black buck, has a bright bay skin, very furry, white bottom, and belly without either spot or streak, black

legs, white circles above its hoofs, and black upon the tips of its ears. Speke's sketch and notes in Royal Geographical Society give some further information. "N'sunnu of Uganda, July, 1862. Thin tail, ended with black in small quantity, belly white, back red, spotted with white points like face and legs; front of fore leg black all the way down, but hind one only half way, from hock down; white points are all over the animal."—J. H. S.

25. *Kobus Sing-sing* (Gray).—Captain Speke brought home two heads of males of a large species of antelope, which is apparently not different from the sing-sing of the western coast. The general aspect of the head resembles that of *K. ellipsiprymnus*, but the face is blacker, and the top of the head between the horns dark rufous.—P. L. Sclater.

"The Nsumma antelope was only met with in Uganda and Madi, where it lies concealed in the high grasses in the daytime, and comes out to feed in the evenings. The males are often found singly, but the females in herds. It does not possess the lunate mark on the rump of the water-bok, and does not stand so high, but is rather more stoutly built."—J. H. S.

I have examined the female sing-sing in the Regent's Park gardens, and find its aspect similar to the animals we shot at 2° N. lat., but there is this remarkable difference that, though I handled the animals we shot, there is no note by Speke or myself of the glycerine-like substance which oozes from the skin of the Regent's Park sing-sing, and I am inclined to think them different. Also the following note in Royal Geographical Society by Speke shows a peculiarity in the marks: "N'samma doe of Uganda, a coarse, heavy animal, the size of a samber, with ruddy-brown-grey coat, but belly tinged with black; has a head like sing-sing, but with white on the *jaw* instead of the *throat*, and no horns; front of legs and all four extremities below knee black, saving white circles above all the hoof horns; tail thin, and dark-tipped, hinder part of hams white," *vide* Speke's sketches of its head and leg in the R. G. S.

26. *Kobus ellipsiprymnus* (Ogilby).—"Uzaramo." Heads of three males and three females of this antelope. Speke's specimen of male is in British Museum.

This fine antelope is very numerous in Uzaramo, frequenting the jungle along the banks of the Kingani River. The lunate mark on the rump is very distinct in the living animal. The does and young are met with in considerable herds; the old bucks singly, or in twos and threes. After crossing the hill-range we saw no more of this species.—J. H. S. In November, near east coast, shot a large female in milk (? hornless), four teats; fur dark brown, throat shaggy, legs thick, a goat-like

animal, but with a peculiar-shaped mark of white on the bottom.

In the same month, and near a river, shot a fine male, larger than our donkeys. Fur brown, mane shaggy; elliptical mark all round the rump; tail 10 to 12 inches long, tapering; hoofs very large, and the upper toes pretty close to them; horns barred across, and drooping forward. I cut him up, and five men carried home the meat.

27. *Kobus sp.* (*?*).—Uganda. Imperfect head of female, probably of a species of *Kobus*. Native name "Ndjezza."

The "Ndjezza" is found among the grasses near water in Uganda. I never obtained the male of this antelope.—J. H. S.

Speke's journal, &c., dated July 17, states, "During a halt shoot a 'Ndjezza' doe antelope, the first I had ever seen. It is a brown animal, a little smaller than the *K. leucotis*, and frequents the same kind of ground." My journal of the following day states on this: "Last evening Speke shot another antelope (female), which we do not know, but the Waganda call it "Njezza," about as large as the Indian black buck, and of a dusty red colour, no spots nor streaks; rather bushy tail. The horns of the male are said to be 8 or 10 inches long, growing forward in a sharp curve.

28. *Hippotragus leucophæus* (Pallas).—Native name "Kolongo," or "Kirongo," the Blaue-bok. Sketch by Speke in the collection of the R. G. S., "drawn to show the contrasting black and white, &c." "Found in considerable numbers in swampy ground near Kazeh. The specimen, of which I brought home the head, after being wounded by my rifle, was pulled down at night by lions, so that I got it in the morning."—J. H. S. Its spoor is remarkable, and often tantalized us—it is peculiarly heart-shaped and large. The fur was a mild red, or bright sandy brown. In size he was nearly as large as a horse, with immense, heavy head of horns curving straight back, with two white marks upon the face. At 3° s. lat., on November 17, saw fifteen of them, also ten giraffe and some hartebeest.

29. *Hippotragus sp.* (*?*).—Native name, "Palembo." Saw its immense horns, nearly of uniform thickness, not graceful, growing straight back in one curve over the neck, and remarkably wide between their tips; the distance between the tips is about equal to their length. The old hunter who showed us these horns said that every inch of this "Palembo" was black, and to show his size he held his hand as high as he could reach. I saw this large black antelope one day with six zebra, and he was a hand taller than them.

30. *Hippotragus niger* (Harris).—Called "Pallahalla," in Unyamezi.

Captain Speke has also brought home the head of a young (male?) antelope, which Grant shot at Ukhutu, under the east-coast range. Dr. Gray has kindly examined this for me, and determined it as referable to this species. Ex. Journal, October 28, 1860: "Had one shot, and bag a beautiful red, fat, little bull, three or four months old. Not the least like an antelope," &c. Ex. Field-book, same date: "Go shooting from 5.40 till noon over a hilly country, with fragments of quartz cast over it, and trees; had one shot, and kill fine calf of —— antelope, more like a common bull calf than an antelope; but he had short tail and trace of a black mane; no stripes on bottom, and rather pointed ears." The horns of the "pallahalla" have a clumsy, abrupt taper, are straight in their bend, and ringed across.

31. *Strepsiceros Kudu* (Gray). — Native name, "Tandalla." The Koodoo was met with in Ugogo and Useke, though no specimens were obtained; but I am certain of the species.—J. H. S. In the Ukuni district during July, while shooting, I saw a herd of this spiral horned antelope, and the tracks of buffalo and elephant. I also saw the natives drying the skins of zebra they had noosed in this forest.

32. *Oreas Livingstonii, sp. nov. (?).*

"Captain Speke met with a small herd of about a dozen elands at Inenge, in Usagara. He describes them as 'head and horns like the common eland, but more rufous on the forehead, with black points and a broad black band strongly marked on the hinder part of the fore legs, just above the bend of the knee.' His figure represents the animal as having a very distinct black dorsal band, and seven or eight white cross stripes across the flanks. I have no doubt this is the same northern species of the eland (*Oreas*) as that described in Dr. Livingstone's Travels.

"Dr. Kirk informs me that he met with this eland on the left bank of the Zambesi, in the neighbourhood of the Kafue, a large tributary of the former stream, and that it is readily distinguishable at first sight from the common eland (*Oreas canna*) by its striped flanks. I think there can be no doubt, therefore, as to its being a distinct animal; and I propose to name it after its discoverer, *Oreas Livingstonii*."—P. L. Sclater. The skin was sketched by both of us, and is rufous red, with the spinal ridge black, slight mane, tail tip a bush of black hair, brisket black, seven to eight white streaks run with the ribs, the longest ones towards the shoulder.

33. While in Ugogo, I had a shot at a new deer, which looked, at two hundred yards' distance, to be a giraffe; the colour was that of a camel; stalked and had shot at 50 yards. He had white streaks running with the ribs, and was rather high-

shouldered. The spoor showed him to be rather round-hoofed, but it was smaller than that of the sable antelope. We tracked him for three hundred yards and lost him. It was curious to observe that he had ascended every mound to look and listen whether he was being followed. Native name in Unyamezi for Eland is "Neemba," and in Uganda, where we saw a pair of immense horns in a hut, he is called "M'Tengo." The only one shot was *O. Livingstonii*, a female with straight horns, having one spire.

34. *Æpyceros melampus* (Licht.).—Uzaramo. Two heads of males in British Museum. Native name, "Pallah." One of the commonest antelopes in Uzaramo and along our route up to Unyamezi. They roam about in large herds, frequenting open parts of the forest.—J. H. S. Also shot two out of a gole of forty. Horns like a pitchfork, and flush with face; fur of back red, belly white, black stripe down rump, black-tipped ears, and small black spots of hair covering the upper small toes; about black-buck size. This antelope is called "Swallah" in Unyamezi, and "Pallah" in Ugogo. Sketch by Speke in collection of R. G. S.

35. *Boselaphus*, probably *B. Lichtensteini* (Peters).—Called by Central Africans "Gnamæra," of which we saw many in several localities. On November 19, while on the march in Usui, in a dry, flat plain, saw four rhinoceros. Speke had a shot, and so had I; then saw two more, then two or three others—in all fourteen rhinoceros, with the whole plain dotted with hartebeest. Our caravan, or line of men, approached within two hundred yards of these rhinoceros, who showed no fear, though in the open, grassy plain without a tree. One fell dead, but the others we wounded (four or five) ran till out of sight—except one, which joined a party of giraffe and hartebeest. We here saw a splendid fight between two male hartebeest, who had regular rounds, halting for breath, and then going at each other again, neither giving in, though the force they exerted in butting sent them both upon their knees, and their tails flying over their backs.

Hartebeest we found to be very wild, and difficult to stalk; their habit was to run for a hundred yards in part of a circle, and then walk, so that a near or standing shot was rarely to be had. They were red, lanky, unshapely brutes.

36. *Boselaphus caama*, called "*Kongoni*" by Wanyamezi, and also "Gnamæra."—A coloured drawing of its head was shown to an old native sportsman, who recognized it as this species.

37. *Boselaphus bubalis*.—Speke's note on this species (in R. G. S.) states, "Cream coloured, seen at ——, if he has a black patch on the flank."—J. H. S.

38. *Oreotragus saltatrix* (Klipspringer).—On January 3, 1861, amongst masses of outcropping granite boulders, I start two of this species. They spring off with a bark, and halt with a spring partly hidden by a bush. They were wild, running short distances over rock of extraordinary inclination, looking so game and pretty—reminding me of the Himalayan chamois or "goorul." Killed a female (with young one, January) and sketched its hornless head, and pinched-in hoofs of remarkable length. Fur, plover-green, crisp or brittle like the "burrell," or wild sheep of Thibet, and very thick, like that of the musk-deer of India. This little antelope affords great pleasure if watched in its native state, it is so wild and nimble in going over rocks.

39. *Catoblepus gorgon* (H. Smith).—Native name "Yoombo." This Gnu was found in large herds in Khutu, in the western borders of Uzaramo. It inhabits the park-like country adjoining the River Kingani, and was not seen after crossing the east coast range.—J. H. S. We shot and photographed them, but they are very wild, not allowing me to get nearer than 400 yards, when they would turn round for a moment, switch their tails, and be off again in a mad-like canter. On the 17th October saw two bulls fighting furiously.

40. *Domesticated Goats* were found all along the route; the smooth-haired, short-horn, and straight, erect-eared breeds of every variety of colour. Their skins are universally worn; those of the kids are sewn together into a handsome robe by the Waganda. In Egypt we came on the long-haired, long-eared breed, and Speke has a sketch of the long-haired goat of Usoga in R. G. S. collection. The native name is "M'boozee."

41. *Sheep* (native name "Kondoro").—The breed in Central Africa have no wool; as the skin is thin it is of little value, and few are kept by the natives. They are stupid-looking brutes, shaped between a dog and a calf, with drooping head, small hanging ears, dewlap, and two hanging bits of skin on the throat; tails broad at base, and tapering to a point; colour varied—bay-brown, white, black, and black-and-white. The average price of one is four yards of American sheeting.

42. *Oxen* (native name "Gnombeh").—We saw two distinct breeds of cattle, the ordinary humped small bull of India and the Galla cattle of Abyssinia. The former extend from the coast to Karagweh, where a nomadic people begin, and are of every variety of colour, pure white with black spots, piebald, skewbald, red, black, &c., with small, straight or crooked horns. The Galla oxen, brought may-be from Abyssinia, are tall, lanky brutes, poor milkers, with immense long horns and almost humpless. To the north of Uganda we saw herds of several hundred hornless grey cattle with

black faces, black inside the ears, and little or no hump, almost prize animals and very docile. We were informed that the Wanyoro amputate the horns of their cattle with a red-hot iron, and, though we did not see the operation, nearly all the cattle were hornless on the Uganda frontier, and a young cow had a scarred sore from having lately been operated upon; I therefore believe that this is universally practised. Nowhere was the ox used as a beast of burden or of draught, it was solely used as food, and its skin as a robe for women chiefly, until we reached Uganda, where cow-skins, handsomely prepared, are worn by all the men. I have seen the Wakidi eating raw meat while cutting up a cow, and they thought this warm raw flesh more digestible than if cooked. They wear the fat in a coil round their necks, and use it as they may require for eating or smearing their bodies. On no occasion, either on this journey or afterwards with the Abyssinian army, have I seen a bit of flesh cut from the living animal.

43. *Bos Caffer* (native name "Bogo").—Met with wherever the grass is sufficiently heavy.—J. H. S. This animal is not domesticated as the species of India is. The dimensions of the largest specimen measured are as follows:—

	ft.	in.
Between tips of horns	2	4½
Inner length of horn from crown to tip of horn ..	2	2
Greatest circumference	1	8¼
Distance between bases of horns	0	1¾
Length from nose to top of head	1	9

It is a fierce animal, affording excellent sport and food. The natives capture them alive in foot-traps attached to logs of wood, or they (the Wagani and Wakidi) steal up to them and spear them while asleep.

44. *Manis Temminckii* (?).—A living specimen was seen with Egyptian traders at 3° N. lat.

In Central Africa its scales were observed worn as a charm; they were 3 to 4 inches across, and lined or combed at one end. The people say "he who possesses one of these animals would have great wealth," meaning that each scale is marketable. Dr. Kirk mentions that its scales are worn as "fetish."

45. *Lepus sp.*—The hare of Central Africa is smaller than the English, it runs more like a rabbit, and its ears are disproportionately large.

46. *Hystrix sp.*—The quills and holes of porcupines were constantly met with, and when we arrived in Uganda territory we found the people hunted them with dogs for their food, digging them out of their earths.

47. *Grass rat*, living in the huts with lizards, both of

which are abundant in Unyoro. It feeds upon vegetable diet entirely, and has the appearance of a half-grown rat. These rats are very tame but wary of traps; they live in holes. The natives of Africa who have not been to the coast will eat rats. I asked four of our followers whether they had tasted them; all replied that they had, adding that the flesh was sweeter than fowl.

48. *Euryotis sp.*—Imperfect skin, Unyamezi. Lives in houses like the common house rat of this country.—'Proceedings of the Zoological Society,' 8th March, 1864.

49. *Aulacodus Swindernianus.*—A head of this from Uganda. This animal was given to me alive by the King of Uganda. I never met with it in a wild state, though it is commonly caught by his hunters for the royal table.—J. H. S.

50. *Golunda pulchella* (Gray).—'Proceedings of the Zoological Society,' 1864, p. 57, pl. xiii. Common in Unyamezi. Coloured sketch by Grant in the collection of the R. G. S. Seen also in Usui. "A striped field-mouse."

51. *Georychus pallidus* (Gray), *sp. nov.*—Mole-rats, swarming at an altitude of 4500 feet, where our camp was pitched at Karagweh, near some wild fig-trees. Their fur was remarkably close and thick, and varied in colour, from black to brown-and-white. The Georychus is considered a fetish animal by some of our followers.

52. *Georychus albifrons* (Gray), *sp. nov.*—Fur ashy grey, with a large white spot on the forehead.

53. *Bathyergus sp.*—Speke's coloured sketch in the Royal Geographical Society much resembles Peters' illustrated species of this, but Speke's figure has a straight tail an inch long.

54. *Jerboa* (killed 22nd October, 1861, with the heel of my shoe).—Bottle-nosed, with long hind legs of fur, pretty pinched-in toes; size small; colour that of an ordinary rat.

55. *Sciurus ornatus* (J. E. Gray).—'Proceedings of the Zoological Society,' 1864, p. 13, pl. i.

56. *Sciurus flavivittis (?).*—25th October, 1860: "Shot a small squirrel with white longitudinal stripe along each upper side. I found it up a tree in Usagara." I have no doubt it is this species figured in Peters' 'Mozambique.'

57. *Sciurus palliatus* (?).—9th December, 1860: "Saw a neat little squirrel of the ordinary colour. I suspect it was this species figured in Peters' 'Mozambique.'"

58. *Dogs* (called "M'boa").—The breed commonly seen is the Pariah of India, either red or white, very rarely of two colours, but the African animal was seldom heard to give tongue. They are affectionate, and will whine if their master be away. The Waganda are passionately fond of dogs, which they steal or even buy for 300 cowries, and lead them about

wherever they go, carrying them on their heads across streams and hunting with them. They, and the people at Karagweh, geld their hunting dogs. A coloured sketch, by Speke, of a dog is in the collection of the R. G. S.

59. *Foxes* were heard often at night, and our followers thought their bark an ill omen. Saw one the size of a jackal, which Speke called the "Silver Fox." He had a remarkably graceful figure, with long neck and long black elegant tail. General colour was dark, but in the dusk he seemed to have a white chest. His bark was like that of a small dog.

60. *Otocyon Lalandii* (Smith).—Shot in Ugogo, while foraging alone in the jungle.—J. H. S. Sketch by Speke in R. G. S. "Bitch fox in milk; shot Ugogo, Nov.; weight, 6½ lbs."—J. H. S. Fur a mottled mud colour; muzzle, paws, and tail black; ears long, erect, coarse, and tipped with black.

61. *Felis Leo* (Linn.).—"Lions were abundant all along the route we traversed, though not often met with. In Uganda, in particular, there were many complaints of their ravages."—J. H. S. The natives kill them in traps made so that a number of logs fall and crush them; but, while at Karagweh, the King ordered us not to shoot at them, as he considered them to have grown from worms out of the bodies of deceased kings, but this restriction did not exist where this Wahuma race were not in power. For instance, in Unyamezi, the Sultan encourages the killing of carnivorous animals, and when a dead one is brought in there is great rejoicing; all the fat is preserved as medicine, or used in making brotherhood, and the paws, jaws, and tail of the animal are tied over the doorway of the Sultan, who alone is allowed to wear its skin. Many instances of cattle and men killing were seen or heard of.

62. *Felis sp.*—The skin of a leopard was brought for sale at Mininga, on the 12th April, 1861. The spots were of the ordinary shape, but jet black and shining.

63. *Felis serval.*—"The Princes of Uganda wear the skin of this animal as a royal badge. This kitten was given me alive by a native of Unyoro, under the condition that if it died the carcase was to be given back for his dinner."—J. H. S. The Sultan of Karagweh sometimes wore the skin of a cat, the fur of which was thick and handsome, with dark lines at the back of the neck, then spotted all over.

64. *Felis sp.*—One evening, at Kazeh, a wild cat, the size of our tom cats, bounded before me through the bush; he had a barred skin and tail. Again, at Ukuni, a similar animal was observed one morning with deep brown bars upon its body.

65. *Felis chaus.*—"Found near Mininga, concealed in a rut on the road."—J. H. S. At Ukuni the village drums always

beat the assembly on the arrival of any animal of the feline order. A lynx, known to kill cattle, and even buffalo, was carried into the village by two men on a pole. He was no longer than our English fox, but of a reddish dust colour, with indistinct spots; head that of a perfect cat, white round the eyes and on the belly; tail remarkably short, stumpy, and, in death, curled over the back like that of a cur dog; legs stout and thickly furred; ears tipped with black hairs, and black in colour with a mixture of white. On his arrival, the Sultan, his Sultana, and a second wife, sat round the dead animal with the people around them, a lump of serpent's dung was rubbed with water into a paste, which the Sultan spotted himself with and his two wives on the forehead, chest, tip of shoulders, insteps, and palms of hands. This concluded, dancing is kept up for several hours.

66. *Hyæna crocata* (native name "Feessee").—Shot a male in Ugogo. They are numerous, daring, and troublesome, seen and heard constantly, running up howling at us even during the day, looking in upon us during night, and stealing the best of our goat by breaking into our huts; but, though bold, this animal is cowardly, and will not attack cattle, as he is afraid of being kicked or tossed by their horns. His general colour is dingy mud, with very indistinct spots on the body and still fewer upon his legs. The muzzle is black, the mane long and mud colour, with black-tipped tail. He had two large mammæ, no testicles externally, and the penis is altogether sheathed. His gait is waddling, and he stands much higher at the shoulder than behind.

67. *Herpestes badius* (Smith).—"Seen singly in the wilderness of M'Gunda M'Kalee, on the ground."—J. H. S.

68. *Herpestes fasciatus* (?) (native name "Goozeeroo").—Saw a troop of them at Ukuni. Shot one with bullet, and another was tearing at the entrails of the dying one when I got up. The whole body and tail was barred across with black.

69. A small red weasel-like animal was observed in Ugogo.

70. *Lutra sp.* (native name "Gonjeh,"—Kar.).—Otters are in the lakes of Central Africa, and the king of them, a grey furred one, is said to live in the Karagweh Lake; but the common otter is said to have black fur. In Abyssinia, those who are allowed to wear its skin are men of rank, similar to our knights.

71. *Megaderma frons* (Geoffr.).—One dried specimen. "This bat was shot flying at Mininga. They were numerous, but rose singly from the ground and alighted sometimes in bushes, sometimes again in the grass."—J. H. S.

72.—*Scotophilus sp.*—One example in spirits of a bat which Dr. Gray identifies as a species of Scotophilus.

On the 11th August, in the forest of Ukuni, I started a yellow bat out of the trees.

73. *Cercopithecus sp.*—An imperfect skin of this; indeterminable. "Tumberi monkey. Numerous in the forest near the coast in Uzaramo."—J. H. S. This specimen was a young one, purchased 13th October, for 3 yards of cloth, from a native. Saw several in the forest, where the people hunt them with dogs, but they do not eat them here, though the Wasoombwah, south of Ukuni, do eat them.

74. *Colobus.*—In Uzaramo, observed monkeys, like the Indian lungoor in size and appearance, taking canters in the forest, then stopping in a daring manner. A shot or two made them stand up like men.

75. *Colobus guereza (?)* (Rüpp.).—The tippet monkey was never seen alive, but in Unyoro we saw its skin worn by porters, and there is no doubt that it extends from the East coast to 4° N. lat. They are said to be numerous on the seaboard (M'rima). This beautiful animal is said by the natives to argue thus: "People kill me for my skin because it is pretty, but I harm no one, I eat no one's grain, my only food is the surfaces of perfectly entire leaves, so why kill me?" It is said of him that when wounded he tears out the long hair of his mane on purpose to destroy his skin! He is not called a monkey (Tumberi), but by some other name.

76. *Arctopithecus (?).*—On the left bank of the Nile, at 2° N. lat., we saw monkeys jumping from tree to tree. They were 16 (?) inches high, had long tails, grey backs, light bellies, black faces and ears, with white beards and eyebrows.

At Madi, in December, while shooting over rocky ground by a stream, some lungoor disputed the position with me, barking angrily; they had black faces and bushy heads of hair. A fortnight afterwards, in the same locality, saw a herd of barking, red-bottomed monkeys, called "Yanee," which my guide told me would return a spear if thrown at them.

Monkeys are a great nuisance when shooting, as they always pass the word of alarm to antelopes and other wild animals. We heard of people who dwell in trees in the country to the west of Karagweh, and imagine that the gorilla was indicated, but we never saw this animal in the land of the Nile.