

# TANGANYIKA NOTES AND RECORDS

— No. 33 —

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*Editor:* J. P. MOFFETT

*Editorial Board :*

A. M. B. HUTT, C.M.G., O.B.E.

R. de Z. HALL, C.M.G.

O. P. BLAKE

A. MORRISON

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## DAR ES SALAAM UNDER THE SULTANS OF ZANZIBAR

By Sir John Gray

I feel that I must open this article with an apology for being so presumptuous as to attempt to enlarge upon the work of such authorities as Clement Gillman and E. C. Baker, with whose intimate and extensive knowledge of the history of Dar es Salaam I can make no claim to be able to compete. My excuse is that these writers have dealt mainly with the history of the place during the period before Seyyid Majid of Zanzibar founded the town and during the period after the arrival of the Germans, and, whilst they have made references to the history of Dar es Salaam between those two events, they have not done so in any great detail. Certain events which occurred during that interim period appear to me to have a certain amount of interest and I am therefore venturing to put them on record.

Neither Arab chroniclers nor Portuguese writers have anything to tell us regarding the coast of Africa between Kilwa Kisiwani and Bagamoyo, but a string of ancient graveyards between those two places indicates that a number of settlements existed along this coast at various times. One such settlement existed on the raised coral cliff at Ras Chokir near where the Dar es Salaam European Hospital now stands. Another existed on the south side of the bay forming the entrance to Dar es Salaam harbour.(1) At Ras Chokir there were at one time extensive traces of a town as well as of a large cemetery. The edition of the *Indian Ocean Directory*, which was published in 1882 (pp. 592, 593), tells us that the white tombs on the cliffs were at that date a prominent landmark, showing out well to sea. The 1897 edition of the *African Pilot* gives us similar information, but soon after the opening of the nineteenth century the tombs began to disappear. A few still remain and from time to time exceptionally heavy spring tides wash out skeletons from the soft crumbling cliff of this headland.

History is silent as to the date of the foundation of these settlements, but what is evident from the remains themselves is that, like many other settlements along the coast between Kilwa and Mombasa, they were occupied at one time by persons of mixed Asiatic and African blood, whom the Portuguese called "Moors" in contradistinction to "Cafres," and whom the Arabs call "people of the Swahili (coasts)" in contradistinction to the "infidels" (Kaffirs) of the interior. The settlers themselves as often as not styled themselves Washirazi, thus alleging, often with some measure of truth, a Persian ancestry.

The settlement at Ras Chokir was called Mzizima. It extended southwards for a distance of about five hundred yards so as to include a village called Mjimwema. A German map of Dar es Salaam, which was published in 1891 and which has been reproduced with Clement Gillman's article on "Dar es Salaam, 1860 to 1940" in No. 20 of *Tanganyika Notes and Records*, shows this last named place as comprising just over a dozen native huts, including one which has a compound suggesting that it was the residence of the headman. In 1947 there was still living a certain Mwinyiheri bin Akida, who claimed to have been born in the village on Ras Chokir itself.(2)

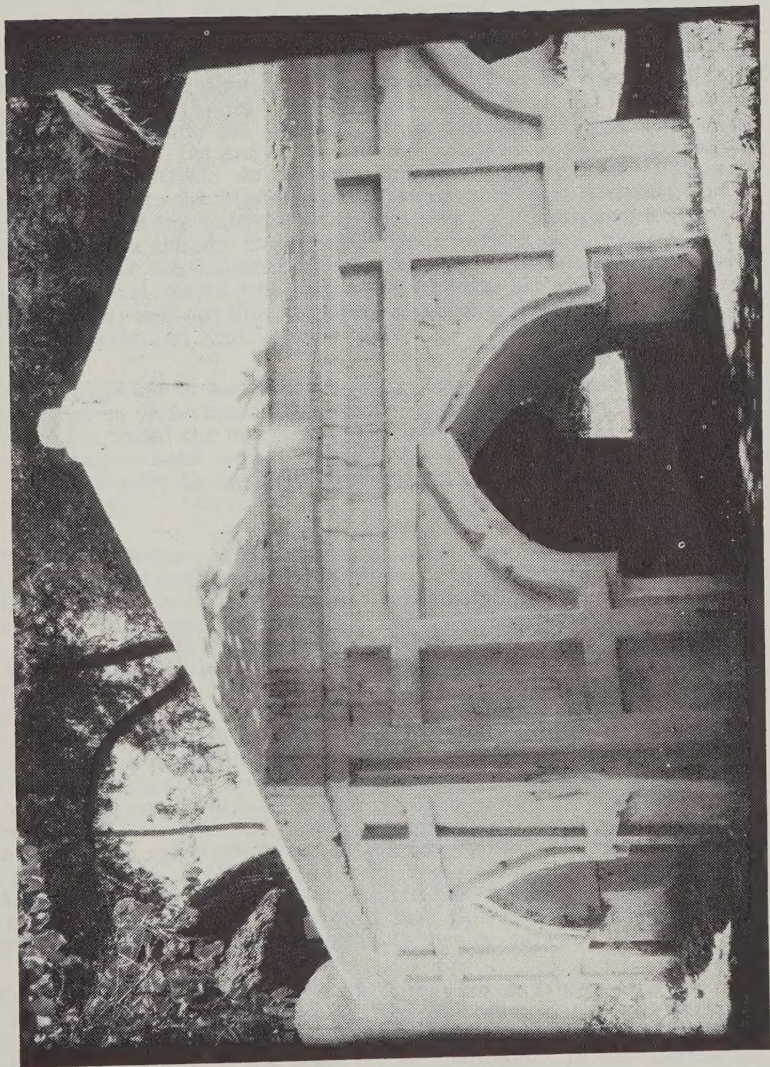
Dr. Velten informs us that according to the traditions of Swahili elders, which he collected in 1896, the forest was first cleared by people from Barawa on the Somaliland coast and that thereafter "the Shirazi tilled the land, built boats, fished and traded in slaves." (3) At some date or other these settlers came to be known as the Washomvi. Like other settlers at Kaole, near Bagamoyo, Konduchi and Mboamaji, they established their settlements in territory belonging to the Wazaramo. Presumably, the settlers made their bargains with the local inhabitants, but it is very evident that those settlements must have depended for their continued existence upon the goodwill of the Wazaramo and, when that goodwill was not forthcoming, upon assistance and support from outside the settlements themselves.

At some date, which can only be fixed very conjecturally as being about the beginning of the nineteenth century or the end of the previous century, the Wakamba made their way from their home in Kenya through Usagara down to the coast opposite to Zanzibar. According to one account they overthrew all the *Masheha*, or local chiefs, between Windi, about nine miles to the north of the mouth of the Kingani River, and the settlement on Ras Chokir. The inhabitants of the coast called to their aid a Mzaramo chief, named Rukoli. After some very hard fighting in which the Wazaramo suffered considerable losses, the Wakamba were driven out and returned to their original home, leaving behind only a few isolated settlements in Usagara.(4)

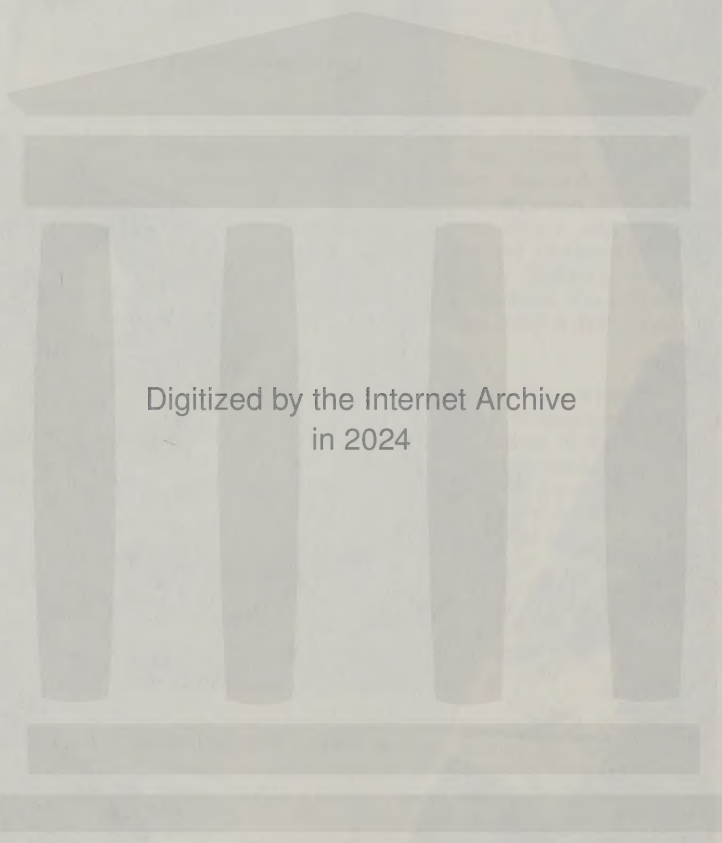
According to another account it so happened that, when Mzizima was thus threatened by the invaders, an Arab named Mohammad bin Shale El Hatmi had just beached his dhow which was laden with salt and other merchandise. The Shirazi elders persuaded Mohammad to lend them his cargo so that they might purchase the aid of the Wazaramo. When the Wakamba had been expelled, the Wazaramo were rewarded with land in the neighbourhood of Mzizima. It is also said that thereafter the Shirazi tacitly acknowledged the supremacy of their allies by paying tribute to them.(5) As the inhabitants of that place were unable to repay their debt to him, Mohammad bin Shale liquidated it by marrying a daughter of one of the Shirazi leaders. Thus came into being the Shirazi-Hatmi clan, which took its name, Shomvi or Chomvi from the salt (*chumvi*), which had been brought in Mohammad bin Shale's dhow.(6)

Mgungunagwa bin Abubakar Mshomvi, who ruled as Diwan at Unonio near Kondushi, left innumerable offspring whom he settled at various places along the coast. A grandson of his, named Mwinyikambi, whose grave is still to be seen near the explosives magazines at Magogoni, is said to have been the father of the Washirazi of Mzizima, though he never was installed as Diwan. He was the ancestor of two brothers named Mwinyikambi *alias* Kitembe and Mohammad *alias* Jalela, sons of Shomvihaji, both of whom ruled as Diwans of Mzizima. These two Diwans were buried near the present Secretariat at Dar es Salaam. Both tombs still exist, Kitembe's grave being a big covered structure.

Tradition makes Kitembe a contemporary of Seyyid Majid bin Said, who was Sultan of Zanzibar from 1856 to 1870. It is said that in those days there was a Banyan named Mamula living at the place where Seaview now is. Mamula had a son, who seduced Kitembe's daughter. In revenge



The tomb of Diwan Mwinjuna bin Shomvilhaji ("Kitembe") near the Secretariat.



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Mwinyishehe, the girl's brother, strangled her seducer. The murdered man's father complained to a half-breed Arab, named Said bin Abdulla El Marahubi. This man was the son of a prominent landowner in Zanzibar by a slave concubine, who belonged to the Pazi clan of the Wazaramo. Said bin Abdalla appears to have exercised at least as great authority in the district as the Diwan himself. He reported the murder to the Sultan of Zanzibar and at the same time informed him that Mzizima was a very fine country. Seyyid Majid decided to go and look at the place on the pretext of investigating the murder. He accordingly set out in a three-masted sailing ship. On arrival he ordered Kitembe to pay compensation to the Banyan's relatives. At the same time the Washomvi and Wazaramo agreed to allow Seyyid Majid to build stone houses at Mzizima and to give him land for the cultivation of coconuts. Kitembe and his family had to mortgage a shamba close to Magogoni ferry to Said bin Abdulla in order to raise the compensation money payable to the Banyan's relatives. In addition Seyyid Majid made Said bin Abdulla his *akida* (officer commanding troops) and put him in charge of his shambas which covered the areas of Gerezani and Kichwele.(7)

One is disposed to feel that this story has a substratum of truth but that it cannot be correct in all its details. Zanzibar Consular records have nothing to say about the murder at this date of a Banyan at Mzizima and one would rather have expected that the British Consul would have reported the matter to the Bombay Government, if such an offence had in fact occurred.

There is, however, evidence that at some date in the earlier half of the nineteenth century Arabs from Muscat and elsewhere were beginning to cross over in fairly large numbers from Zanzibar and to settle at various places along the opposite coast. For instance, we know that a certain Juma bin Mohamed El Nabhani settled at Mboamaji. According to custom he took unto himself a wife from amongst the daughters of Heth, marrying an African woman who bore him one son and two daughters. The son was named Muhammad and the eldest daughter was commonly known as Mwana Arabu. When their father had made his fortune, he returned to Muscat taking his son with him, but leaving his eldest daughter behind at Mboamaji. Eventually, Juma's son, Muhammad, returned from Muscat to Mboamaji in company with a Muscat Arab named Rajab bin Said bin Muhammad El Marjebi. On arrival at Mboamaji Juma gave his sister Mwana Arabu in marriage to his companion Rajab. Mwana Arabu gave birth to a son, named Muhammad, who begot a son, whose proper name was Ahmed bin Muhammad El Marjebi, but who was better known to fame as Tippu Tib. It was from Mboamaji that this famous slave and ivory trader set out on his second journey to Tabora in the early 1860's.(8)

Family histories such as that of Tippu Tib and his forebears must have been by no means uncommon. On the other hand, the European trader was deliberately excluded by the Sultans of Zanzibar from the most lucrative portions of the trade on the mainland. In the commercial treaty which Seyyid Said bin Sultan concluded with Great Britain in 1839 he specially reserved for himself a monopoly and the exclusive privilege of sale of ivory and gum copal between the ports of Mtangata and Kilwa Kisiwani. A similar reservation was made in the treaty which he concluded with France in 1846 and which his son, Seyyid Majid, concluded

with the Hanseatic Republics of Lubeck, Bremen and Hamburg in 1859. (9) Whilst no such reservation was contained in the earlier treaty which Seyyid Said concluded with the United States of America in 1833, he vigorously protested in 1847 against an attempt by the American Consul to assert the right of Americans to trade on the mainland and, following upon his protest, no further attempt was made to maintain that right. (10) As will be seen, this bar on trade in ivory and copal did not operate against Banyan and Muslim traders from India, many of whom came from the independent states of Cutch and Kathiawar.

Turning to European records, it is somewhat remarkable that neither Owen in the course of his hydrographical survey of the East African coast between the years 1822 and 1825 nor Guillain some twenty years later realised the existence of a large land-locked harbour to the south of Mzizima. Owing to stress of weather, the dhow in which the missionary Krapf was sailing in 1850 to Kilwa put into the harbour of Msasani to the north of Ras Chokir and stayed there some thirty-six hours, but the dhow by-passed the harbour just to the south when it continued its voyage. (11)

In 1859 Burton and Speke reached the coast on their return from the discovery of Lakes Tanganyika and Victoria. Burton thus describes the event:

"The 3rd February 1859 saw us winding through the poles decorated with skulls—they now grin in the Royal College of Surgeons, London—a negro Temple Bar which pointed out the way into the little maritime village of Konduchi."

". . . A general procession conducted the strangers to the hut, swept, cleaned, and garnished for us by old Premji, the principal Banyan of the headquarter village . . . ."

"We were detained at Konduchi for six days between the 3rd and 10th February . . . ." (12)

"One day we were surprised by the abrupt entrance of a youth, eminently North German in aspect. He announced himself as Dr. Albrecht Roscher, of Hamburg . . . ." He stayed with us two days and then departed northwards." (13)

Burton had a good deal more to say about Roscher than I have set out but, as much of it is uncomplimentary and also unjust, there is no need to repeat those remarks here. Burton is, moreover, wrong in saying Roscher went northward. In actual fact he landed at Konduchi on February 9 from the dhow, which had come from Zanzibar and which next day conveyed Burton and Speke to Kilwa. As happened with Krapf, their dhow by-passed the harbour at Mzizima. Burton tells us that "our course lay past the settlements of Msasani and Magogoni and the little Mbwezi river to Mboamaji, "rain water" in the Mission Map called Mburomaji, vulgarly Boromaji. The little port-village with jungle rolling up to the walls, and anchorage defended by the Simba Islets, is a favourite entrance to the East African interior." (14)

Roscher likewise headed southwards, and not northwards, as Burton would have us understand. He, however, travelled overland and on foot. On February 10, the day of Burton's departure from Konduchi, he reached Msasani. Two days later he reached Mzizima. On February 13 he crossed the harbour mouth and proceeded to Magogoni.(15) There is no need to follow his later journeyings. Later in the year he reached the shore of Lake Nyasa a few weeks after Livingstone had reached its southern end. A few months afterwards he was murdered. As an explorer he may not have made any great discoveries, but to him at least belongs the credit of being the first European to set eyes on what is now called the harbour of Dar es Salaam.

On September 26, 1860, Colonel Rigby, British Consul at Zanzibar, arrived at Bagamoyo with Speke and Grant on the first stage of the two latter's journey through Uganda to Cairo.(16) One of the objects of Rigby's visit to Bagamoyo was to liberate slaves, who had been acquired by Indians. For this purpose he stayed in Bagamoyo until September 30 when Speke and Grant struck camp and set out on their first march into the interior of the continent. During his stay Rigby liberated the slaves of five Indian owners—residing in Bagamoyo, five other Indian owners residing at Konduchi, two other owners residing at Mzizima, and two others at Magogoni.(17) The figures are not without interest as indicating the relative prosperity of the four places just named. By this date Bagamoyo was the recognised outlet for a caravan route leading from Lake Tanganyika to the coast. Another route, which branched from this route near the coast, proceeded according to Erhardt's famous "Slug Map" (compiled in 1855) to Mboamaji. As already seen, Burton and Speke diverged from the same route to Konduchi, which appears to have provided as much business for Indians at this date as did Bagamoyo. On the other hand trade at Magogoni and Mzizima (also marked on Erhardt's map) was on a much smaller scale.

To those who know Dar es Salaam today it may at first seem a matter for surprise that the advantages of this landlocked harbour were not appreciated earlier than they actually were. In order to find the reason we must go back to the days before steam. The harbour entrance is narrow and tortuous and therefore difficult for a vessel which is not capable of quick manoeuvring. During spring tides the stream is strong in the harbour channel, especially towards or after low water, as it is then confined to the channel itself. The ebb tide sets eastwards over towards the islands, which serve as a breakwater to the harbour entrance, and there is a risk of a vessel being swept in on them. Steam or other mechanical power will enable a vessel to counteract these tendencies of tide and current, but a sailing vessel of moderate size could not answer its helm or manoeuvre so quickly, more especially when either monsoon was blowing in any strength. For dhows and the like the entrance to Dar es Salaam was tricky and risky. More or less open roadsteads such as Bagamoyo therefore had a greater attraction for them. Even such harbours as Mboamaji, Msasani Bay and Konduchi, which had the protection of outlying reefs, appear to have thrived as sea ports to a far larger extent than the one lying just to the south of Mzizima.

Another reason why the harbour did not attract Arab or other settlers earlier than it did was the hostility of the Wazaramo. In 1845 a French

explorer named Maizan had been murdered a short distance inland from Bagamoyo at the instigation of Mazungera, whom Burton describes as the "Phazi", a "chief of the Wakamba, a sub-tribe of the Wazaramu".(18) Owing to pressure from the French Government Seyyid Said was compelled to send a punitive expedition against Mazungera. The expedition followed the same course as a number of other expeditions against the same person. There was very little fighting. Such fighting as there was gave Mazungera time to make himself scarce and the expedition returned to Zanzibar, having made a prisoner of the man who beat the drum at the time of Maizan's murder. His captors passed him off to the French Consul at Zanzibar as Mazungera himself.(19)

Mazungera was to prove a source of trouble for several years to come. In 1861 he began to infest the caravan routes leading from the interior and to intimidate Banyan traders on the coast near Mzizima. Seyyid Suleiman bin Ahmed El Busaidi, the Governor of Zanzibar, led a force against him. Suleiman subsequently informed the British Consul, Colonel Pelly, "that he followed the Phazi to his main haunt, but the Phazi escaped through a postern into the bush," whereafter, deeming that honour was satisfied, Seyyid Suleiman returned to Zanzibar. Later in the same year the Banyans again complained that their lives and property were in danger and asked for the despatch of a punitive expedition. The Sultan sent a small force across to Magogoni, but this met with no greater success than the previous one and for precisely the same reason. Mazungera once again managed to make his getaway.(20)

According to accounts given to Dr. Velten, in 1896 by Swahili elders, Suleiman bin Ahmed must have returned to Mzizima very shortly after this last expedition. He brought presents with him, having been commissioned by Seyyid Majid to acquire land from the local inhabitants for the building of a new capital.(21) Seyyid Suleiman was an interesting personality. He had been born in about 1787 and was a distant cousin of Seyyid Said, father of Seyyid Majid. When Seyyid Said first visited Zanzibar in 1828, he left his cousin in charge there as Wazir, guardian and adviser to his favourite son, Khalid. In 1844 the British Consul Hamerton described Suleiman bin Ahmed as "not a clever man, but a kind, good sort of a person" who had much influence with the pagan chiefs on the coast of Africa.(22) This statement sufficiently indicated that he was pre-eminently suitable for the delicate task of inducing the local inhabitants to make grants of land to Seyyid Majid. The negotiations went through quite amicably. The original acquisition included the areas of Gerezani and Kichwele.(23) Either at the same date or else a little later Seyyid Majid also acquired considerable areas of land at Kurasini and Upanga, which with those at Gerezani and Kichwele,(24) were largely given over to cultivation of coconuts and rice. As a German map of 1891 shows, the land occupied by the Washomvi at Ras Chokir and Mjimwema remained in the undisturbed possession of its original owners, though, as already seen, other land nearer to the Magogoni ferry was apparently mortgaged to the Arab Said bin Abdullah El Marahubi, in order to satisfy a claim for blood money.

I can find no record of any building operations at Dar es Salaam until the latter days of 1865. On January 16, 1866, the British Consul at Zanzibar informed the Senior Naval Officer on the East Coast of Africa that he had

issued a pass to sixteen of the Sultan of Zanzibar's slaves to proceed to Dar es Salaam "to be employed on the works in progress there." (25) As we learn from the sixth edition of the *Indian Ocean Directory* (pp. 589, 590), the stone for most of the buildings was taken from the islands which form the eastern breakwater protecting the entrance to Dar es Salaam harbour.

Later in 1866 Seyyid Majid paid a personal visit to his new capital. He was accompanied there by Dr. Seward, the acting British Consul, who on November 10, 1866, made the following report to the Bombay Government:

"I have the honour to report the return of the Sultan after a ten days' absence at Dhar Salaam, the proposed site of a new town on the mainland littoral a few hours' steaming south of Zanzibar.

The Sultan is expending large sums of money upon the transport of building materials to this place, where he is at present erecting a palace, a port, and dwellings for his officials. His Highness hopes to form the nucleus at least of a trading port, whence caravan routes shall radiate into the interior and which bye-and-bye may connect with the northern and southern ports of Keelwa and Lamoo.

The conception is good but the one want of labour appears to be fatal to its realisation. No considerable body of slaves could be kept together there. Forty are said to have decamped during the short stay of His Highness. The settlements of Lamoo and Mombassa are flanked by tribes more dangerous to the fugitive slave than the Arab, but the country behind Dhar Salaam has no such flight-restraining terror.

The capacity of the new port for shipping is of the best. A narrow but deep channel leads to a chain of harbours that extends several miles inland. These harbours receive the outflow of a river which never dries up. The narrowness of the leading channel is a drawback which only the presence of a steam tug can countervail. This want has been anticipated and a powerful steam tug ordered from Hamburg.

The question of health is a serious one as affecting the future of Dhar Salaam. The Banians declare it to be a fever stricken place, scarce habitable during the rainy season, but then they are opposed to the withdrawal of trade from the time honoured depots on the coast. Concentration implies competition and lessens profits. Arabs are reluctant to patronise the new venture. Their slaves would flee. They too declare it unhealthy, but not loudly, for examples have been made of some who gave Dhar Salaam a bad character. The slanderers were flogged. The hale and robust air of every dweller whom during a recent visit I encountered gave no support, however, to its ill repute.

Its water supply appeared to be sufficient and good irrespective of the stream before mentioned. Shallow lakes, frequented by water fowl, were found in the immediate neighbourhood of the new site: and the Arab Governor drew my attention to numerous little hills (sic. ? wells) of beautifully sweet water percolating through the high banks of white aluminous marl . . . (? adjoining) the first harbour.

As the soil is a sandy humus, the humus must be . . . capable of growing either sugar or cotton, but its grain growing value is undoubted. To attract cultivation, His Highness offers . . . (? free land) in any reasonable measure to those who will undertake agriculture in its neighbourhood. The sole condition attached to the gift is that the land be made to yield produce and kept under cultivation.

I have stated that no considerable body of slaves could be kept together at Dhar Salaam unless their slave labour can be largely supplemented or entirely replaced by free labour. There is no hope of any extension of this projected mainland settlement and of the seeming prosperity which on the considerable island of Zanzibar is sustained by violent and purely artificial means." (26)

Building operations appear to have proceeded very slowly. The Sultan's palace was still unfinished when Père Horner of the Holy Ghost Mission visited the place in November, 1867. (27) Very little further progress had been made when Tippu Tib reached Dar es Salaam with a caravan from the interior on January 19, 1868. Tippu Tib had reached the place in the last week of Ramadhan. He found Seyyid Majid observing the fast in his unfinished palace. Tippu Tib's biographer gives the following account of Tippu Tib's stay:

"For the time being things were lively in Dar es Salaam. All who belonged to 'society' had proceeded with the Sultan's Court to the new capital. All the non-trading Consuls and a great number of other Europeans, all the better-class Arabs from Zanzibar, Pemba, Mombasa and Lamu, as well as a great body of Indians, had followed the Sovereign. Among the latter were all the creditors of Tippoo Tib, in whom the arrival of the caravan naturally evoked great delight; for on seeing the rich spoil in ivory they felt certain of receiving back the money they had advanced with high interest. But beside this the coming of the caravan excited the greatest interest in all circles as being the first one bound for the coast to reach the new capital. The Sultan himself showed interest in the daring voyager, whom he loaded with high honours and entertained as his guest until the 'Great Feast', which concludes the month of fasting (known in Turkey as the 'Festival of Bairam').

After the feast the whole Court returned to Zanzibar in three ships, headed by the Sultan and his notables and the foreign representatives on board a French man-of-war, while the remaining Arabs and the Indians followed in two smaller vessels." (28)

In July, 1863, H.M.S. "Daphne" called at Dar es Salaam. Her commanding officer, Captain G. L. Sullivan, gave the following account of the visit:

"Dr. Kirk being anxious for an interview with the Sultan, who was at this time residing at his palace on the mainland at Darra Salaam, asked me to convey him across in the "Daphne" previous to our final departure for the south; thither therefore we proceeded, having on board Dr. and Mrs. Kirk and their baby, for whom a patent cradle was constructed out of the lid of a box and two chairs.



Hamed bin Muhammed (Tippu Tib)  
(This is believed to be the only  
photograph now in existence).



Bishop Tozer also formed one of the party; he had had a severe attack of fever, and I had persuaded him to accompany us for change of air, that of Darra Salaam being cool and refreshing, as compared with the low, marshy, fever and dysentery producing isle of Zanzibar, and he returned with us at the end of a week quite another man.

It had just become the Sultan's new abode, he having built himself a palace here; another building had also been erected, a kind of official hotel for foreign consuls, or others, on their visits from Zanzibar, and there Dr. and Mrs. Kirk took up their abode, the Bishop remaining on board. At the end of the week we returned to Zanzibar." (29)

Captain Sullivan took a photograph of Dar es Salaam, which has been reproduced as an engraving in his book "*Dhow Chasing*."\* The half-fortress, half-palace of Seyyid Majid is therein depicted with a flag flying on its roof. Behind it is a mosque. It is not easy to make out which of the other buildings is the hotel. The photograph shows that quite a number of substantial and well built houses had been more or less completed by this date.

In 1870 a Select Parliamentary Committee on the East African Slave Trade recommended that certain measures should be taken for the reduction of the traffic in slaves with an ultimate view to the final abolition thereof. They recommended that the shipment of slaves from the mainland should be confined to one port and that that port should be Dar es Salaam, where a Consular Officer should be posted. The British Government adopted these recommendations and drafted a treaty for presentation to the Sultan of Zanzibar. H. A. Churchill, the British Consul at Zanzibar, embodied the terms, including the provision confining the export of slaves to Dar es Salaam, in an Arabic letter addressed to Seyyid Majid. Churchill later reported that the Sultan "took some time to consider the matter, and at last, being pressed, he said he would discuss the question with me and wanted me to go over with him to the coast for that purpose. I was prepared to go, but he was so ill at the time that he begged me to put it off until he could send me notice; instead of that he came back himself and ten days after that he died." Seyyid Majid died on October 8, 1870, and his brother Seyyid Barghash succeeded to the throne. Whilst Majid was still living, Barghash had assured Churchill that, in the event of his succeeding his brother, he would comply with the wishes of the British Government. But on October 10, when reminded of his promise, "he repudiated everything, and said that he had made no arrangement whatsoever; that he had never promised anything; that it was false, and even had he done so, he was not Sultan then." (30)

There were other signs that there had arisen a new ruler in the land who was anxious to break with much of the immediate past. In the early days of Majid's reign Barghash had attempted to supplant his brother by force of arms. For this he had been temporarily banished to India, but had been allowed after some time to return to Zanzibar. Though outwardly there had then been a reconciliation between the two brothers, it was notorious that neither had ever forgiven the other. It was consequently almost instinctive in Barghash to decline to further any of his brother's projects. Amongst other things he washed his hands entirely of all schemes

\* And in *Tanganyika Notes and Records*, No. 24, December 1947-48.

for the development of Dar es Salaam. So long as Seyyid Majid held court there, it had been a centre of attraction for business, which would otherwise have gone elsewhere. When Seyyid Barghash withdrew his patronage, all the recently created prosperity of Dar es Salaam vanished. As already seen, there had been a number of Banyans and Arabs, who had cried down the place in Seyyid Majid's time. Now that there was no Sultan to chastise them with whips for so doing, their voices were raised again and a ready ear given to them by Seyyid Barghash.

On April 15, 1872, Dar es Salaam met with a further setback in the shape of a hurricane, which set in from the S.S.W. and reached as far as Bagamoyo on the mainland. It did great damage to shipping, buildings and plantations in Zanzibar, but does not appear to have wrought the same havoc on the mainland. Two buoys, which were moored outside the entrance to Dar es Salaam harbour, were washed ashore. It is somewhat typical of the utter lack of interest of Seyyid Barghash in the place that ten years later neither of these buoys had been restored to its proper position.(31)

In about July, 1873, a dispute arose about a woman between a slave of Seyyid Barghash and a member of the local tribe. In the course of the dispute one of the local inhabitants was killed. Thereupon his fellow tribesmen demanded the life of the slave as of right. The Akida referred the matter to the Sultan and was ordered on no account to give up the slave and to attack the natives, if necessary. No actual fighting took place, but on hearing the orders of the Sultan, the local inhabitants stopped sending in produce from the interior. Shortly afterwards feeling was further intensified when another native was assaulted and severely wounded by one of the Sultan's soldiers, despite his protest that he had nothing to do with the people in the original dispute. The Akida paid a large sum in compensation to the wounded man, but the trade boycott was even more rigidly enforced and all local barter ended. The result was that in about September, 1873, a number of Banyans and Khojas removed to Magogoni, Tuliani, and other neighbouring villages, where a brisk copal trade rapidly sprang up, to the prejudice of Dar es Salaam.

In December, 1873, Vice-Consul Elton visited Dar es Salaam, Magogoni and Tuliani. His primary duty was to emancipate slaves held by Indians under British jurisdiction and protection. When called upon to declare the number of slaves held by them the members of the Indian community declared only twenty-four, but subsequent enquiries produced sixty-four more. All these were emancipated and in one bad case the owner was prosecuted and fined. Prosecution in another equally bad case was impossible because the owner implicated set off for Zanzibar on the day of the Vice-Consul's arrival at Dar es Salaam and returned on the day of his departure.(32)

On January 7, 1874, Elton wrote a report on Dar es Salaam, which is so full of interest that it deserves to be set out in full:

"The Sultan's residence is built at the inland extremity of the basin, and is to the far right of the town, and from it a line of stone houses should form a crescent facing the anchorage, with a broad road and flights of steps communicating with the sandy beach, on the inner

line of which wells, affording a good supply of fresh water, are conveniently constructed. But time, neglect, and weather are rapidly destroying the steps, terraces, and wells; only two of the houses are habitable, and the others are stopped short at the first storey, a low thatched barn does duty for the Custom-house in the broad overgrown field which marks the site allotted by Seyed Majid for the erection of a more pretentious structure; the boldly designed main streets are choked up with rank grasses and bush-wood, the houses of the most part deserted and locked up, or giving way to decay, except at one enterprising corner where a few Indians industriously strive to revive a failing trade with the interior. House property is almost valueless, and land around so depreciated that a plantation of some extent was shown me for sale, at a price of 40 dollars. A plot of land and a half-finished house in the centre of the town, mortgaged about two years ago for 500 dollars, would not fetch a reserve of 200 dollars when offered lately by auction; at the same time a thatched hut and two acres, in a good situation, went for 7 dollars. Yet the climate is healthy, the air clear, and fevers uncommon and easily shaken off,—so say the inhabitants,—the site a beautiful one, and the surrounding country green and well wooded; nevertheless there hangs about the scene a gloomy appearance, and the idea suggested itself that the desolation must be connected with the smash of some limited liability company, which has been compelled to stop work, and failed to attract the public by its preliminary outlays to see the advantages of a new seaside settlement.

The Akhidah, Rashk Allah, an Arab of Sheher, represents the Sultan's authority, and is supported by a few mercenaries, Arabs, Baluchis, and half-castes. A guard is kept at his house, where there are a quantity of muskets, matchlocks, and old powder-horns stored for the purpose of equipping the 200 slaves, who work on Barghash's extensive plantations, in case of disturbances with neighbouring tribes. Two or three Arabs pine on the outlying estates, and a host of the Mrima half-castes idle and shuffle about the town and adjacent villages, living from hand to mouth on the produce of their slaves, and on small trading ventures which they send in their charge towards the Uzaramo country.

The Indian community of Dar es Salaam is represented by:—

1 Wannia; 13 Battiahs; 1 Mooltani; 3 Bhoras and 3 Khojas, with families; whilst in the neighbouring villages, where the copal trade has gone, Magogoni contains 13 Battiahs, 1 Bhora and 3 Khojas; and Tuliani, 10 Battiahs and 10 Khojas, the latter with families.

A primary mistake was made by an attempt to force the Dar es Salaam trade, to the prejudice of other ports further north, which had before enjoyed the monopoly of caravans from the interior, for, after a glimmer of success, the death of Seyed Majid, and the withdrawal of patronage from the town, was at once followed by the natives resuming the popular and old times. It is now a long period since any caravan of value has been down, although the people live on rumours of a rich arrival en route; a small quantity of ivory, it is true, did reach from Unyamwezi during my stay, but it represented the venture of one man, and had no influence upon local trade. Ivory pays to the Dewan a "Moorba" of 3 dollars per frasilah, when brought in by those

tribes of the Washenzi, who trade habitually, or by Arabs, or by Waswahili, and a further 12 dollars per frasilah on arrival at Zanzibar. If brought in by Washenzi, who are not habitually traders to the port, it pays 6 dollars per frasilah to the Dewan, but 9 dollars at Zanzibar. Thus, in each instance, the total amount of duty per frasilah, 15 dollars, is the same. A few tusks find their way down from high (? the high-lands) into the Uzaramo country, where elephants are still said to be found in considerable numbers. The india-rubber liana is in abundant quantities in the close vicinity, and, at one time was exported largely at from 9 dollars to 10 dollars a frasilah. Its collection was stopped in consequence of leopards attacking boys gathering the juice, several being killed, and a fall in price; and it is now being destroyed wholesale, together with the copal trees, in the extensive clearings carried on by the Sultan, in order to add to his land under cultivation. These plantations are thickly planted with coconut trees, as yet young, and muhogo; some fine mango trees are to be seen, but the oil tree palms introduced are progressing but slowly. Wax is seldom brought in now by the Washenzi; the copal is almost entirely diverted to Magogoni and Tuliani. At these latter villages, towards evening, armed parties appear with the gum and spend the night in bargaining with the Indians, 2 dollars are often asked for what is worth 6d., and long and difficult negotiations invariably precede the handshake which cements the deal, but this once given no dispute is known to follow. Millet, Indian corn, and rice, of several varieties, senna, and bungala are grown throughout the district, which exports to Zanzibar, but (? not) to a great extent.

The copal trade, intermixed with grain speculations, and the lending moneys and goods at a rate of 8 per cent per mensem to small traders who sneak about the upper lands and are seldom absent for more than three months at a time on a single venture, these are the commerce of the Indian. Lower down in the Chungu-bueni district, and the fine Kwale district, he would find more copal, more ivory, more general trade, but would there have to pay blackmail on all his profits to half-a-dozen self-styled Sultans. Here he is effectually protected from oppression, the Sultan's authority being maintained, and, although he sighs for the greater gains, yet he deems it prudent to be in a secure atmosphere, and away from the slave caravan line and its lawless followings, and in the main he is, I think, right.

The slave caravans strike the coast above Dar es Salaam, turning off from the Kisiju road, near Mboamaji, and making for the Dar es Salaam river, which they cross about five miles from the sea, near Seyed bin Abdullah's (a worthless, cringing Arab, and a wine-bibber), from thence their path passes through the Sultan's plantations and skirts close past the town. The straighter road, via Tuliani and Magogoni, is now seldom adopted as the ferry over the entrance to the river, which must be crossed, presents a danger. Their numbers and their destination might here become known, and they fear information finding its way across to Zanzibar. Recently, the caravans have so increased in size and numbers, that the Akidah, who, as a rule, avoided the subject, one day expressed his astonishment, and went so far (he, an Arab of Sheher with natural Slave Trade propensities) as to say 'he had never seen anything so shameful, it was only killing man, not trading.'

Religion does not cause dissension in the Dar es Salaam district. The Shafis and the Bohras coalesce in many points, the Khojas follow their own line quietly, whilst the prejudices of the Battiah are never wantonly outraged; neither do politics ruffle the pool with more than a passing ripple. One day resembles another with its money making and eternal gossiping, and pleasant idling; ample regrets follow relations of the past prosperity when Seyed Majid was King, and caravans headed by flags and men firing guns swaggered through the street to receive royal presents, and men of high estate from Zanzibar spent their revenues open-handed; but nothing is done, Barghash is pronounced 'the unlucky', and tomorrow is a counterpart of yesterday.

Yet that the country presents admirable facilities for sugar growing, even for European settlements, is evident to all. It appears the one healthy spot on the Mrima; cattle thrive, it is pleasant to the eye to rest upon; alluvial, well-wooded plains roll back to the Uzaramo hills and the neighbours, undisturbed, are harmless.

The slave population appears fairly well off in the district: food is cheap, and fish plentifully caught all along the coast and in the river. Miles of staked enclosures fronting the sea form preserves, which are fished and re-fished assiduously, and boats work the outlying banks for 'bonito'. During the three 'days to themselves', commonly given to slaves, they collect large quantities of salt with which they do a small trade, and manage to secure something for daily necessities." (33)

In 1877 the process of gradual deterioration was to some extent checked when work was begun on what was afterwards known as the Mackinnon Road. The scheme was promoted and paid for by Mr. (afterwards Sir) William Mackinnon and the second Sir Thomas Fowell Buxton. Their object was to open effective communication for wheeled traffic with Lake Nyasa and by that means to develop legitimate forms of commerce between the coast and the interior and thus gradually to eradicate the slave trade. The completion of the road was regarded as a matter of vital urgency and the first working party was instructed to commence operations and not to lose time in making preliminary explorations. On Kirk's advice work was begun at Dar es Salaam.(34)

By July, 1877, six miles had been completed, but one serious obstacle had already come to light. Edmund Buxton, brother of Sir Thomas, reported that he had discovered tsetse fly in the low hills near the coast. This virtually destroyed all hope of using bullock or donkey transport on the road. Nevertheless, the work went ahead and by September, 1877, fifteen miles had been completed. Then Mazungera, the descendant and namesake of Maizan's murderer, tried to bar the way by demanding payment for permission to proceed. When news of this reached Zanzibar, the Sultan instructed his Akida at Dar es Salaam to proceed with an armed force to the spot and put an end to this obstruction. The arrival of the troops had the desired effect. The opposition melted away and the work proceeded as before.(35)

In 1879 four elephants made their way up this road into the interior. These animals were not denizens of Africa. They had been acquired

through William Mackinnon's instrumentality in Bombay by the International African Association, which had been established under the auspices of Leopold II of the Belgians to promote the exploration and civilisation of Africa. The elephants had been conveyed together with their mahouts across the Indian Ocean in the "Chinsura," a steam vessel of two thousand tons. It was deemed unsafe to take the vessel into Dar es Salaam harbour. The "Chinsura" therefore anchored in Msasani Bay on May 31, 1879. One animal was lowered into the sea by the ship's derricks and after some demur was persuaded by its mahout to swim to the land. Next day the "Chinsura" was taken closer inshore and the remaining three animals were landed. They were taken thence to Dar es Salaam, whence they set out on July 2, 1879, along the Mackinnon Road on the first stage of their journey to Lake Tanganyika. Only one of the four reached its destination, the other three dying on the way. The sole survivor reached Karema on the shores of Lake Tanganyika in December, but soon suffered the same fate as its companions.(36)

In the meantime the Mackinnon Road was gradually penetrating further into the interior. By the end of 1879 it had reached its fortieth mile.(37) In 1881 Kirk visited the road which had by this time extended seventy-three miles inland. Previous visitors had formed a poor opinion as to the manner of its construction and its potential value as a means of communication.(38) But Kirk was a bit more complimentary. He thought that on the whole it was well constructed and would require little labour to keep it open. But animal transport was out of the question and the road had not so far tapped any highway of commerce. In Kirk's opinion it was never likely to become a trade route to Lake Nyasa, though William Mackinnon and Sir Thomas Fowell Buxton were to be congratulated "on the benefit conferred by them on the country." (39)

We hear no more of any progress on the Mackinnon Road after Kirk's visit. It was a private venture. Lake Nyasa lay more than four hundred miles beyond roadhead and at the then rate of progress it would take another twenty-five years to complete the task. Kirk's report had come the nearest to bestowing any benediction on the enterprise and even that had hardly been more than damning with faint praise. In the circumstances one is not surprised to learn that the undertakers gave up the stupendous task. Six years later, according to Dr. Franz Stuhlmann, the road had "become deteriorated and overgrown as it was no longer used as a road." (40) Nevertheless it was still discernible in 1894 when Lieutenant von Schlobach of the German army made a survey of the proposed railway between Dar es Salaam and Morogoro. In his report this officer says: "Past Yombo to beyond Kongoromboto my railway trace follows the Mackinnon Road which it then leaves to gain Kiserawe Mission by a north-westerly development . . . About one kilometre beyond Kiserawe the railway trace again reaches the Mackinnon Road and follows it down into Mpiyi valley." (41) There consequently would appear to be little doubt that, except for a few deviations, the present motor road between Dar es Salaam and Morogoro follows the same alignment as did the Mackinnon Road for its first seventy miles.

Mackinnon and Buxton did not labour entirely in vain. As the former once said of a subsequent East African undertaking of his, he and his colleague could claim to have taken out their dividends in philanthropy.

In other words, Kirk was right when he said that they had conferred a benefit on the country through which their road passed.

The local inhabitants very soon began to appreciate the advantages of the road. In July, 1877, as many as a hundred natives a day were stated to be using the road bringing rice, india rubber and copal into Dar es Salaam.(42) When Lieutenant Henry O'Neill visited Dar es Salaam in the early days of 1879 he reported that the Wazaramo were doing a lucrative trade in rubber, which they sold "to the buyers on the road" and that about 1,000-1,500 frasilas (35-000-52,500 lbs.) had been exported from Dar es Salaam during the preceding twelve months. There were also extensive traces of copal digging. In fact, "the country has become almost honeycombed by it, and it is almost dangerous for the passage of any beasts of burden." In addition, "a few trees here and there in the country surrounding Dar es Salaam represent what at one time must have been a dense copal forest," but O'Neill was unable to form an estimate as to the quantity shipped from the port.(43)

This report was fully confirmed by Dr. Kirk two years later. He found copal trees existing throughout Uzaramo, but most of the copal was obtained by digging for the semi-fossil resin. According to him rubber was obtainable in such abundance that not even the reckless mode of tapping employed by the natives had seriously affected the supply.(44)

Nearer to Dar es Salaam a number of coconut plantations had come into being. Some were owned by the Sultan and others by private land-owners. Native tradition has it that one of the very first acts which Seyyid Majid did after acquiring land near Mzizima was to send for some Arabs and say to them, "plant the seeds which I shall send you from Unguja (Zanzibar) and till my land in this country." (45) Doubtless the planting of these seedlings was partly intended as an outward and visible symbol of the Sultan's entry into possession, but it was also a case of sound husbandry. In 1879 O'Neill reported that the Sultan's plantations contained about 36,000 trees of which about three-fifths were bearing. In addition, some 2,000-3,000 seedlings had been planted during the last two years.(46)

Though the explorer Keith Johnston, writing in 1881, had little to say in praise of Mackinnon Road, he had to admit that it carried a considerable amount of traffic. Writing in the same year Kirk said:

"The Wazaramo, who have been brought under the influence of the road, are one of the most degraded and troublesome tribes on the coast, and until the country had been opened up it was unsafe for any but an armed party to attempt to pass. Being cowards, they took advantage of the dense jungles and thickets through which the narrow paths had to pass, and kidnapped and plundered stragglers, thus extorting payment. Their utter weakness has now become manifest wherever the road has reached, and any one may traverse the country unarmed and without danger of molestation if only he follows the road.

On the people themselves also an influence has been obtained, for I notice that along many miles of road they had formed extensive fields

in the adjacent lands, and had commenced to settle in open and cleared spaces, leaving their stockaded villages in the jungle." (47)

Kirk also hoped that the road might prove an effective check in the overland traffic in slaves. For some time past, in order to escape the vigilance of British men-of-war, slaves from Kilwa and other places to the south had been marched overland to such ports as Pangani and Tanga and conveyed thence surreptitiously in canoes or small vessels to Zanzibar and Pemba. The Mackinnon Road cut right across this coastal route and there is no doubt that, if the Sultan of Zanzibar's troops had effectively patrolled the road, many of the slave caravans could have been intercepted and the slaves rescued. But Kirk was constantly complaining of the *non possumus* attitude adopted by the Akidas commanding the Sultan's troops in Dar es Salaam. However, in justice to those officers it must be allowed that the personnel upon which they had to rely was most unsatisfactory.

In 1873 the Wazaramo had been plundering travellers near Bagamoyo and Dar es Salaam and the Sultan's irregular troops had been called out to deal with the situation. The campaign appears to have followed the same form as previous ones. As soon as the soldiers appeared, the enemy disappeared and no attempt was made to round up the offenders. Soon thereafter Lieutenant O'Neill reports that:

"Relations between the Sultan's authorities at Dar es Salaam and the Wazaramo, with whom they came in contact during the late war, flavour somewhat of an armed neutrality and the soldiers are even now afraid of proceeding through the country thirty miles in the interior, unless in such force as to withstand any reprisals that may be made. Two, who were ordered to accompany me by the Akida absolutely refused to proceed with me beyond the 'bungalow' (sc. on the Mackinnon Road), where a force of ten is stationed, alleging the hostile feeling on the part of the natives to be the cause and I believe that, until this feeling has subsided, it would be safer for European travellers to walk alone than to be accompanied by such an escort." (48).

In 1880 a native interpreter on board H.M.S. "Ruby" reported that slave caravans from the south were stopping short of Dar es Salaam at Mboamaji, whence slaves were transported either to the island of Uzi off the south coast of Zanzibar or else were being sent round the east coast of Zanzibar to Pemba.(49) When Kirk himself visited Dar es Salaam a year later he learnt "that in Dar es Salaam itself there is an amount of transfer of slaves from hand to hand which could not be the consequence of local wants alone," and the situation required "more careful watching than I am able to give.

"The Sultan's headman, a chief of the handful of irregulars, for there is no Governor, is not a person who impressed me on this occasion favourably, and I have mentioned this to His Highness. The slave trade here is, however, very small, and the few gangs that pass are taken away from the coast. They could, however, easily be stopped by the soldiers if the local official had a wish to do so. It has, however, of late not been found convenient to pass so far north as Dar es Salaam, and slaves are shipped in canoes or small dhows from native villages

further north. The numbers, however, so shipped are comparatively small, and could easily be reduced if an active officer were stationed at Dar es Salaam." (50)

In the latter part of 1884 a famine in Uzaramo led to an overt increase in the slave trade in Dar es Salaam. An interpreter, whom Kirk sent over to investigate the murder of a Banyan, reported that the Wazaramo were living on wild grass, seeds and roots. The inhabitants of one village were kidnapping those of another and fathers were selling their children for food. The interpreter saw over three hundred slaves in the village of Mjimwema. He got wind of the fact that an Arab was shipping twenty-seven slaves to Pemba and informed the Liwali of Dar es Salaam, who, however, acted with such remissness that only one slave was rescued, though the owner was captured. (51) A few days later H.M.S. "Philomel" seized another dhow at Dar es Salaam with 108 slaves on board. (52) On November 17 the pinnacle of H.M.S. "Turquoise" rescued another seven slaves from a dhow in Msasan Bay, but the crew managed to escape. (53) The trade was still being carried on in the following year despite the fact that the acute famine was over. (54)

It was not until the Germans took over Dar es Salaam from the Sultan of Zanzibar, and effectively occupied the adjacent hinterland, that the last of the Arab slave traders was overthrown and the overseas traffic in slaves was destroyed.

The fourth edition of the *Indian Ocean Directory* (p. 594) describes Dar es Salaam as it was in 1882 in the following words:

"The palace of the Sultan is completed, and is the westernmost house on the bank. A flagstaff stands in front... The remainder of the stone buildings, with two exceptions, are roofless, and look more like ruined houses than uncompleted ones, on account of the vegetation which climbs round them. There is, however, a considerable population living in the mud huts around those ruins, and the village of Mjimwema may be said to be part of Dar es Salaam. There is a governor, with a guard of the Sultan's soldiers, and a customs-house official.

A large tract of land at the back is planted with coconuts, belonging to the Sultan, and will bring in no inconsiderable revenue in a few years. There is already a little trade with the interior, caravans of ivory occasionally arriving for shipment to Zanzibar. A road is in course of construction for wheeled traffic between the town and the north end of Lake Nyasa . . . .

There are several good wells. The best and most convenient is in the Sultan's grounds at the back of his palace. There is another at the mosque close to a small house with a dome, but there is some difficulty about boats filling their barricoes there, though it is outside the mosque wall. A third is at a Banyan's house, some way inland to the N.E. The well, which is most conveniently situated close to the beach, in the bank to the East of the unfinished buildings, should be carefully avoided."

On February 23, 1886, Dar es Salaam was visited by Colonel (afterwards Field Marshal Earl) Kitchener and his French and German colleagues on the International Commission for delimitation of the boundaries of the Sultan of Zanzibar's mainland dominions. At that date the town had a population of five thousand. Of these 107 were Indians (45 Bohoras, 14 Hindus and 47 Khojas). Another hundred were members of the Arab garrison and there were also 600 or 700 slaves working on the Sultan's plantations.

The town was in charge of a Wali, named Muhammad bin Suleiman El Haruni, an Arab of Muscat, who had at that date held the post for four years. He laid claim to the exercise of jurisdiction over the tribes in the hinterland to a distance of one month's march from Dar es Salaam but, as further interrogation showed that he was surprisingly ignorant of the chiefs and peoples of those countries, that claim must be considerably discounted. He stated that on the previous day people had come from Ras Kimbiji, about 25 miles S.E. of Dar es Salaam, to obtain his adjudication on a matter of inheritance, "and that he would cause to be arrested any party who should refuse to submit to his judgment." He also informed the Commission that there were six to seven "important natives", who lived on plantations several hours' march inland, "who go each year to Zanzibar to pay a visit to the Sultan."

The Customs Master at Dar es Salaam was a Hindu, named Bhanji Wadowji, who, to judge from the answers he gave to the Commission, was a gentleman of sedentary habits. He stated that:

"The only places under his orders outside of Dar es Salaam are the customs-houses of Magogoni, Mboamaji, and Tuliani; he states he may have customs-houses between Mboamaji and Kisiju, but he does not know of them and he does not know of any person at Dar es Salaam who would give this information.

He had visited Magogoni and Tuliani, but he has not been to Mboamaji. He does not know if there is a customs-house at Msasani; he says perhaps there are customs-houses there but these two places belong to Bagamoyo.

Ivory comes in greater abundance to Dar es Salaam than to these other places, which, however, on the other hand receive more merchandise, but he says the result is pretty well the same for all the customs houses." (55)

The future of Dar es Salaam had, however, been settled long before the Commission began its work. In August, 1885, a German naval squadron under the command of Rear Admiral Knorr proceeded to Zanzibar to obtain a commercial treaty from the Sultan and also recognition by him of the protectorates which the German Emperor claimed over certain territories in the interior of Africa by virtue of a number of treaties which Carl Peter and certain other Germans professed to have made with the local rulers. With six German warships anchored in front of his palace at Zanzibar Seyyid Barghash had no choice in the matter and perforce yielded with the best grace he could. This was followed by a letter from Admiral Knorr to the Sultan asking for the use of Dar es Salaam as a German naval

base "from the friendship of Your Highness on behalf of my Government." Once again, Seyyid Barghash could not choose but hear and made the best of the situation by offering to place at the disposal of the German Government the buildings and space necessary for the navy's purposes on shore (56).

A photograph of Dar es Salaam, which was taken by a German photographer from the harbour and which was reproduced in 1894 in Stuhlmann's *Mit Emin Pascha ins Herz von Afrika* suggests that outwardly the place was much the same at that date as it was when Captain Sullivan took his photograph over twenty years before. Nevertheless, according to what Captain Leue tells us it was but a whitened sepulchre when he landed there on May 25 1887. "The place and its port were desolate. . . . All the streets were overgrown with grass and bush and the individual groups of houses were joined by native paths only. . . . In the halls of the Sultan's palace lived bats, and castor oil plants were rampant in its walled garden. Part of the palace was used as a gaol." (57).

As Elton wrote in 1874, "had the original plans of the founder, Seyyid Majid, been carried out in their full integrity, he would have left a model settlement behind him in the Mrima." (58). It was no fault of the founder that those plans were never carried out in full. The idea showed that Majid, like his father Seyyid Said, was a man of considerable vision and, had his life been prolonged, his plans might have come much nearer to fruition than they did. History, however, proved that his plan, like that of the Mackinnon Road, was prematurely born, but neither his name nor those of the promoters of that later scheme should be entirely forgotten. Amid obstacles and difficulties, which it is hard for this modern age to appreciate, they made their contribution to the advancement of the prosperity and well being of the peoples of Tanganyika.

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(4) Stuhlmann—*Mit Emin Pascha ins Herz von Afrika* p. 34.

Hartnoll—*Story of the Origin of the Name of Bandar es Salaam.* T.N.R. No. 3 p. 117 (which gives the name of the Mzaramo chief as Pazi Gurajazi).

(5) Hartnoll—*op. cit.* p. 117.

(6) Baker—*op. cit.* pp. 47, 48.

(7) Hartnoll—*op. cit.* pp. 117-119.

(8) Brode—*Tippoo Tib* pp. 13, 14, 27.

(9) Ball—*Zanzibar Treaties* pp. 15, 21, 27.

- (10) T.N.R. No. 22 pp. 71-74, Brady—*Commerce and Conquest in East Africa* pp. 108, 109.
- (11) Krapf—*Travels and Missionary Labours in East Africa* p. 419.
- (12) Burton—*Lake Regions of Central Africa* ii. 274, 276.
- (13) Burton—*Zanzibar: City, Island and Coast* ii. 332, 333.
- (14) Burton—*Zanzibar* ii. 334.
- (15) Kersten—*Von der Decken's Reisen in Ostafrika* i. 332 and map: Petermann—*Mittheilungen* (1862) pp. 1-4.
- (16) Russell—*General Rigby: Zanzibar and the Slave Trade* p. 88.
- (17) Register of "Slaves liberated from Indians. 1860 (to 1874) "Z.A."
- (18) Burton—*Lake Regions* i. 73-78. Was Mazungera descended from the earlier Wakamba invaders of Uzaramo?
- (19) Sillery—*Maizan*—T.N.R. No. 11 pp. 89-91.
- (20) Pelly to Bombay Government, January 1, 1862—Z.A.
- (21) Velten—*op. cit.*
- (22) *Report on the Affairs of the Imaum of Muscat* (1844)—Z.A.
- (23) Hartnoll—*op. cit.* p. 119.
- (24) Register of Documents—Book A.3, Vol. I, Z.A.
- (25) Letter in Z.A.
- (26) "Political Agent to Bombay Government, 1865 to 1867"—Z.A.
- (27) Schneider—*Die Catholische Mission von Zanzibar* p. 98.
- (28) Brode—*op. cit.* pp. 44, 45.
- (29) Sullivan—*Dhow Chasing* pp. 211-213. The palace stood on a site now occupied by the Sewa Haji Hospital, P.W.D. Workshop, and Railway Station.
- (30) *Report from the Select Committee on the Slave Trade (East Coast of Africa)* (1871) p. 74. The full text of the correspondence between Churchill and Barghash can be found in Coupland—*Exploitation of East Africa* pp. 88, 89.
- (31) Kirk to Bombay Government, April 20 and May 2, 1872—Z.A. *Indian Ocean Directory* p. 593.
- (32) Elton to Kirk, December 14, 1873—S.T. No. 5 (1874) pp. 2, 3.
- (33) S.T. No. 5 (1874) pp. 10-12.
- (34) Kirk to Earl of Derby, July 26, 1877—S.T. No. 3 (1878) pp. 347, 348.
- (35) Same to Same, December 12, 1877—S.T. No. 1 (1879) p. 163.
- (36) Sir Savile Lumley to Marquis of Salisbury June 28 and July 4, 1879, Kirk to Salisbury, May 30 and June 2, 1879. S.T. No. 5 (1880) pp. 5, 6, 233, 234, 240: *Independence Belge* of July 4, 1879: Coupland—*Exploitation* pp. 334, 335; Gillman—*Indian Elephants in Tanganyika*—T.N.R. No. 12 p. 61; Sillery—*Indian Elephants in Tanganyika*—T.N.R. No. 11 p. 64.
- (37) O'Neill—*Report on road in progress from Dar es Salaam to Lake Nyasa*—StT. No. 5 (1880) pp. 201, 202.

- (38) cf. letter of S. Napier Bax in T.N.R. No. 14 p. 60.
  - (39) Kirk to Earl Granville, February 28, 1881—S.T. No. 1 (1882) p. 160.
  - (40) *Mitteilungen aus den Deutschen Schutzgebieten* vii. 231, 232.
  - (41) *Deutsche Koloniablatt* (1895) p 377.
  - (42) Kirk to Derby, July 26, 1877—S.T. No. 3 (1878) pp. 347, 348.
  - (43) O'Neill to Kirk, February 14, 1879—Z.A.
  - (44) Kirk to Granville, February 28, 1881—S.T. No. 1 (1882) p. 161.
  - (45) Hartnoll—*op. cit.* p. 118.
  - (46) O'Neill to Kirk, February 14, 1879—Z.A.
  - (47) Kirk to Granville, February 28, 1881—S.T. No. 1 (1882) p. 160.
  - (48) O'Neill to Kirk, February 14, 1879—Z.A.
  - (49) Capt. Molyneux to Capt. Earle, April 18, 1880—S.T. No. 1 (1881) p. 324.
  - (50) Kirk to Granville, February 28, 1881—S.T. No. 1 (1882) p. 161.
  - (51) Same to Same, October 24, 1884—S.T. No. 1 (1885) p. 73.
  - (52) Same to Same, October 27, 1884—S.T. No. 1 (1885) p. 74.
  - (53) Capt. Woodward to Admiralty, November 18, 1884—S.T. No. 1 (1885) p. 77.
  - (54) Kirk to Granville, April 13, 1885, Kirk to Salisbury, September 22, 1885—S.T. No. 1 (1886) pp. 119, 128, 129.
  - (55) Notes of the Delimitation Committee enclosed in Kitchener to Earl of Rosebery, March 15, 1886—Z.A.
  - (56) Knorr to Sultan, September 26, Kirk to Salisbury, September 28, 1885—*Africa* No. 1 (1886) p. 76.
  - (57) Leue—*Dar es Salaam* pp. 4, 5.
  - (58) S.T. No. 5 (1874) p. 10.
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## THE PEOPLE OF THE LAKE VICTORIA REGION

By H. Cory.

(From a lecture given to the Lake Province Society)

The Lake Province covers a land area of about 39,000 square miles and has a population of one million eight hundred thousand. As far as population is concerned it is by far the largest province in the territory. There are few records of what the country was like in pre-European days, but it seems clear that it was overgrown with bush, in some areas heavy and in some areas light. An early explorer wrote that the Sukuma drive their cattle into the *forest* during the dry season. It was everywhere sparsely populated. The scattered human colonies consisted of a hundred odd people under the leadership of an Ntemi, a name which only later became the title of a chief. *Kutema* means to cut down trees in the bush, and shows that the Batemi of this time were true pioneers who opened up the country and retained the leadership of their followers, who were mainly members of their own family.

The various settlements had little communication with each other and had no conception of tribal unity. The Batemi never thought of enlarging the areas under their influence except for the sake of increasing the hunting ground for their people. But these men were not only hunters. Even at that time, before the arrival of the Hamitic invaders, the Bantu tilled their fields and drove their cattle to pasture. Hunting, however, was from all points of view an important activity. It was necessary to protect the fields in the bush against marauding game and to provide additional meat for the pot, and later to obtain ivory for trading.

It may be because of the isolation of the separate settlements that the form of marriage by abduction, traces of which can still be found here and there in the marriage customs, was widespread.

I have mentioned the Bantu, which is not of course the name of a certain race, but of a very big language group. Now the Bantu are themselves immigrants and are a mixed people. Sir Harry Johnston thinks that somewhere to the South of Lake Chad the indigenous people came into contact with Hamitic groups. The resultant mixed people migrated to the east and crossed over to the Elgon area, where, even now, live people who speak a very ancient dialect—Lugishu. From there they spread to the south and back to the east in the Lake region. These people are the Bantu.

Many theories have been advanced in support of the supposition that the Lake region was one of the first areas to be inhabited by the Bantu. Professor Warmelo, who tried to enlist the aid of linguistic science to help in the solution of ethnological problems, advanced the following theory: Words which are common to a great number of Bantu languages and dialects must be old, that is to say they have been used by people who were the ancestors of younger tribes. The meaning of such very old words should allow a conclusion to be made about the manner of life, about common animals and plants, about foodstuffs and implements and arts and crafts the word *Nyanja*, *Nyanza*, *Nyassa*—Lake—from which comes *Ngwa*

with which the people were familiar. He drew attention to the fact that *Nyanza*—to the Lake—contracted to *Mwanza*, is found in many Bantu languages. It does not mean water or river—it means lake. Common to many languages also is the root *ato*, meaning canoe, and *kapi*, meaning paddle. The root *twa*, meaning pigmy is also widespread and shows that these Ur-Bantu knew the aboriginal inhabitants of Africa.

For reasons which we do not know, thousands of years ago people in the North of Africa began to emigrate to the south. The progress was slow and it is, for instance, said that the Masai arrived four to five hundred years ago at the Rift Valley.

These people were Hamites; their home the Gala area in Abyssinia. There is a theory that some of these nomadic cattle-breeders were forced into their southern journey by the gradual drying up of the Sahara desert at a certain period. This emigration brought the Bantu into contact with the Hamites a second time, and this is perhaps one of the most important features of their history because, as Professor Seligman states: "The history of Africa south of the Sahara is no more than the story of the permeation through the ages, in different degrees and at different times, of the negro and bushman aborigines by Hamitic blood and culture. The Hamites were, in fact, the great civilizing force of black Africa from a relatively early period."

The entrance gate of the Lake Province for the Hamitic immigrants was Bukoba, and they probably arrived there about three hundred and fifty years ago. They were Bahima, also called Bahuma or Batusi. The ruling family in Bunyoro was of Hamitic origin and a scion of this dynasty entered the Bukoba area with a group of followers. He was Ruhinda, one of those figures in African history who have become the source of many legends and who are not now thought of as mortals but enjoy the veneration given to deities, although they are not members of any celestial hierarchy. Ruhinda gave his name to the ruling class of Bukoba, the Bahinda. The Hinda invasion was in the main peaceful.

Ruhinda held sway over the south-west and south coast of Lake Victoria as far as Smith Sound. There is a legend that at the time of his death Ihangiro and Uzinza both wanted to bury him in their country, and each side pulled so hard at the body that it broke in half and each half was buried in the country of the party gaining it. Another legend has it that his body was cut up into five pieces and one piece was buried in each of his five dominions as a solution of the dispute between them about the place of burial. The head was taken to Karagwe, the two arms to Kiziba, one leg to Kiamtwara and the other to Ihangiro. The trunk was buried in Uzinza on the Lake shore in Ruhinda's village of Kimwani.

There is an uninterrupted line of descent of the Bukoba chiefs from Ruhinda to the present day. Kiziba has its own history of origin; it is, however, connected with the Hinda family. The Bahinda are now a very big family and many of its members are just common peasants.

Biharamulo is a big district and the area is characteristic of many parts of Africa. Ample spaces, totally undeveloped, scarcely populated and in-

fested with *glossina* of all kinds, which means sleeping sickness and rinderpest. For this reason the population is assembled in "concentrations." The inhabitants represent a connecting link between the Lacustrians, the tribes living between the Lakes, and the Rundi group of tribes. Their ruling dynasty is of Hima origin. When the Germans arrived in that part of the country in about 1889 they found there Kasasura—a very powerful chief who made such an impression on Count Götzen, a German officer, that the latter recommended the building of a strong fortification, which still stands, the walls now tending to lean perilously outward. Each D.C. in succession now leaves as monument to his period of office one or more buttresses to reinforce the tottering glory of the past.

In Bugufi live the Bahangaza, who are Barundi, as likewise are the inhabitants of Busubi, the second chiefdom comprising the district of Ngara. The rulers' family came from Urundi and is of Hima or Tusi stock.

The Bahangaza are ethnographically so completely Barundi that a Rundi chief recently though fit to claim Bagufi as part of his country. The claim was laid before the United Nations, who decided to investigate it. The people of Bugufi unanimously, and in an impressive form, gave it to be understood that they would never agree to change British Administration for Belgian. As even on historical grounds the claim was very shaky, the final decision in this matter followed the will of the people. The Bahangaza are a very quiet people, not many of them literate, and their standard of living is low. Their main income comes from labouring in Uganda, whither every year a considerable percent of the male population migrates. But when it came to the vital question of which European power should be in charge they realized the importance of the issue and became articulate and firm.

Passing back through Biharamulo and rounding the Emin Pasha Gulf, we enter Uzinza. Emin Pasha was, as is generally known, an Austrian at one time in the service of the German Government, and sent to occupy this country. He was for a time resident at Bukoba and he was responsible for making it possible for everyone to grow coffee. He laid out a big coffee nursery near Bukoba and he distributed the young plants among cultivators. The planting of coffee had been for centuries the prerogative of the chiefs, who gave away seedlings, rather as medals are given, to deserving favourites.

Coffee is indigenous to Africa and has been known since very ancient times, not as a beverage but as a very sustaining food. The Gala and others took with them on their raids balls made of raw ground coffee mixed with ghee as iron rations. It is said that a ball the size of a billiard ball could sustain a man for a day. Because of its use, raids on distant tribes depended on the possession of coffee, and so leaders, and later the Bukoba chiefs, reckoned coffee to be part of their armaments.\*

The Bazinza are related to the Bahaya, were under Hinda rule, and colonized only the shore area of the Lake. The hinterland did not interest

\*Cf. A History of **Robusta** Coffee in Bukoba, by T. S. Jervis, in **Tanganyika Notes and Records**, No. 8, December 1939.—Ed.

them. It is now of great interest to the Sukuma Federation, to which the Zinza chiefdoms belong, and about which I will soon have more to say.

We next cross Smith Sound, which is presumed to have been named after a certain Lieutenant Shergold Smith, the leader of a missionary expedition to the Lake area in 1877. During this expedition Lieutenant Smith carried out a survey of the Sound on which Mwanza is built. He was subsequently murdered on Ukerewe Island by the men of Chief Lakonge, the ruler of that area.

From Smith Sound we enter Sukumaland proper. I recently read an old book, "New Light on Dark Africa," in which the author, Karl Peters, writes: "The Basukuma exhibit the characteristics of the dwellers in marshy plains. They are heavy and sleepy, but, as it appears, reliable and steady." I think that this is not a bad judgment, especially as I feel that they have woken up since then.

Along the same road on which I have brought you from Uzinza to Usukuma came the Hima, whose descendants now rule over the greater number of the Sukuma chiefdoms. While the group of Lacustrians living north and west of Lake Victoria has for many hundred years formed and retained a number of kingdoms, the best known being Buganda, Bunyoro and Karagwe the group living south of Lake Victoria has never built up an empire. But the immigrants from the north, mainly from Bunyoro, being well acquainted with the idea of powerful and extensive kingdoms, fundamentally influenced the political structure of the area. The immigrating families established authority over sections of the existing population and came to rule over them. The Hamitic element has been wholly absorbed, however, and only faint traditions remain to tell of the historical events of the invasion.

There is no strict conception of a common tribal name for the people living in the area from Shinyanga to Lake Victoria and between Smith Sound and the Mbalangeti river. The word "Sukuma," now generally used as a tribal name for the inhabitants, in their own language means "north." The Basukuma, together with the Nyamwezi-speaking peoples living south of Usukuma, comprise the Sukuma-Nyamwezi language group which has in common not only language but also many other ethnic characteristics. Travellers passing through Nyamwezi countries were probably informed about the country of "sukuma"—the country to the north—and so the name came to be generally adopted. The Basukuma of the Lake area proper call themselves Bagwe and their language Kigwe, but this name is not used frequently and some people say that it has been given to them by their neighbours.

As a result of the non-existence of a common tribal name the subjects of the Sukuma chiefdoms adopted the clan names of their rulers as their specific tribal names. The most important among the immigrating families of Hamitic origin were the Bazinza, Basiha, Bakwimba, Bagero and Basega. Many contradictory stories exist about their early history, their adventurous travels and their conquest of Sukumaland. Almost every Sukuma chiefdom has its own tradition which tends to increase the importance of the first arrivals and to compete thus with chiefdoms ruled by

other branch lines of the same family. Generally it can be stated that the leading members of these families were not military conquerors. They did not arrive with numerous followers and they were obviously accepted as leaders by common consent, as no major fights are related as occurring between them and the people they found living in the country. It seems that, at the very time of their arrival, the country, which had been originally very sparsely populated, became sufficiently consolidated to make a common leadership for groups of isolated settlements desirable. These immigrants offered many advantages as leaders. They were ideal judges because they were totally unbiased, as they belonged to none of the local clans. For the same reason they were also the best arbitrators for a just distribution of the spoils of the chase and of clan warfare. They may also have impressed the indigenous population with superior mental and physical qualities.

It may be that a large part of Usukuma has had a comparatively peaceful history. Although inter-tribal wars were frequent, they were not very bloody and sometimes a few accidents, not necessarily connected with warfare, sufficed to bring the battle to an end. From outside there was little menace, and therefore you see in north and middle Usukuma a type of scattered settlement most convenient for the peasant, with his fields close to his hut, whereas, in the south, raids by the Masai and more serious inter-tribal wars menaced the people, who reacted by living in close settlements.

As a result of the favourable conditions of a comparatively dense and widespread population, many indigenous institutions can be found here. Hardly anywhere else are the religious features of ancestor worship so elaborate as they are in Sukumaland. It is not so much the rites which are exceptionally elaborate. As far as these are concerned other tribes have created more impressive ceremonies. It is the actual organisation of the religious cult which is a special Sukuma achievement. We have here two societies, Bafumu and Bumanga, to one or both of which almost every Sukuma belongs. Their sole purpose is to regulate the features of the cult of ancestor worship, the basic religious beliefs of the Sukuma, and, for that matter, of all Bantu. For instance, novices are instructed as to what medium for soothsaying is preferable to any other. It is a common feature that magic and medical knowledge are closely connected with the religious aspect of life.

Besides the Bafumu and Bumanga, concerned with ancestor worship and soothsaying, since ancient times secret societies of snake-charmers, porcupine-hunters and elephant-hunters have thrived in this area. Although the origin of these is not always found in Sukumaland or in Unyamwezi, they were able to form their biggest organisations and most lively inter-society connections here.

Since the Banyamwezi, who are so closely related to the Basukuma, were the first to be employed as porters on the great Bagamoyo—Tabora—Ujiji trade route, the Basukuma were called, and called themselves until recent times, Banyamwezi as soon as they left their own country. They have been and still are very good workers. They made contact with very many other tribes. When European agricultural enterprises were started

they became a very valued labour force in the camps. Today groups of them are frequently found near the big estates, living on their own land and still working for the Europeans. Sometimes they have become detribalized and supply the markets with the produce of their fields. Everywhere one or another member of the Sukuma tribal group has preserved the manifold knowledge of his fathers and practices a little medicine here and a little magic there, or is popular as a diviner.

Before we come to Musoma, I must mention the Ukerewe or Bukerewe Island, as it really should be called. It is inhabited by a mixture of tribes. The island is thickly populated by roughly equal proportions of Bakerewe, Bakara (who have their own island a few miles to the north) and Bajita who also inhabit an overcrowded chiefdom on the mainland just inside the Musoma District. All three tribes have a tradition of having come at a not very distant date from Bukoba District, and there is every reason to believe this to be true. The three languages are so similar to the Luhaya tongue that the people of Ukerewe have little difficulty in understanding the speech of the Bukoba natives. The chiefs are Bahinda.

The island of Ukara is about eight miles north of Ukerewe. The people immigrated there from Bukoba, where the inhabitants of the chiefdom of Maruku are still known as Bakara, though the smartly dressed young men from Maruku deny relationship with the sack-clothed Bakara dock labourers on the wharf at Mwanza.

In the Musoma District live the Bajita, already mentioned, the Ikizu, Shashi, Zanaki, Ikoma and Nguruimi. All these tribes have a dash of Hamitic or Nilotic blood in them. The Hamitic Taturu (other names for these people are Tatoga and Wamangati) were numerous in this area. Baumann, from whom the Baumann Gulf takes its name, and who was the leader of an expedition in 1896 or thereabouts, found them still near the Lake shores, whence they have now completely disappeared.

The broad Mara river divides the Musoma District from the North Mara District. In the latter live the Luo and Girango who are Nilotic, the Kuria who are of Bantu-Nilo-Hamitic origin and the Suba who are ethnologically between the two.

The Kuria are Masai who emigrated into their present habitat about eleven generations ago. They settled down—for reasons unknown—to a peasant life, giving up the nomadic habits of their forefathers. They retained some of the Masai spirit—the love of cattle and great zeal in acquiring them, and an independent character.

Before I leave the African population of the Lake Province I would like to say a few words about the original social structure. From the west to the east the authority of chiefs diminishes, from absolutism in Bukoba through a milder form of absolutism slightly controlled by democratic institutions in Sukumaland, to the substitution of councils of elders for chiefs among the Kuria.

Now we come to the more recent history of this big area, which is fairly well known because many of the first European explorers passed

through one part or another of the Lake Province. Speke discovered the Lake in 1858 during his famous expedition with Burton. Stanley passed several times through this region and had trouble with the inhabitants of Zumbiri Island, on the Bukoba coast, of which no tradition whatever could be found by later explorers! Speke and Grant, on another expedition, passed through Karagwe on their journey to Mutesa, the notorious Kabaka of Uganda, and lived for several months at Rumanika's court. Dr. Junker, the famous Russian explorer, spent six days in Msalala in 1886. A German lieutenant, Kollmann, wrote the first monograph about this part of the Lake and the inhabitants of its shores in 1899. The book is called "Victoria Nyanza." Another old book is that of H. Rehse, a German Sergeant-Major. It is called "Kiziba" and the co-author of it was Mwami Lwamgira, the notable Mhaya.

The first Church Missionary Society station to be opened in this area was at Buzilima at the south end of Smith Sound. The history of the Church Missionary Society relates how in November, 1882, the Reverend E. C. Gordon, Mr. C. Wise and others reached Buzilima. The old chief, Chasama, who only died recently, had very interesting stories to tell of the arrival of these early missionaries. Most of the party pushed on to Uganda, but Gordon and Wise remained and started to build the mission station. The famous Missionary, A. M. Mackay, joined them in 1887 and a new station was built twelve miles to the north of the old one, the hostile attitude of the chief and various inhabitants having made the station at Buzilima intolerable. The short life of this Mission station came to an end in 1890 with the death of Mackay. The work was continued at other stations, including Nassa, but the Busambiro station was abandoned and has never been revived. The graves of Mackay, Parker, Blackburn, Hunt and Dunn, who all died there during this brief period, can still be seen near the ruins of the Mission. The work of the Church Missionary Society in the Sukuma area was taken over by the Africa Inland Mission in 1909.

The White Fathers Mission started from Zanzibar via Bagamoyo, and the first caravan arrived at the Lake in 1876, the ultimate goal of the safari being Buganda. There they settled first and from there in 1882 they returned to the southern shores of the Lake. They did not leave Buganda voluntarily, but had to escape because of the persecutions of Kabaka Mutesa.

They selected Bukumbi in the Smith Sound area as a suitable spot for a mission station. Shortly afterwards they opened up a second station in Nyegezi. This later station was, however, soon closed down. It was situated on the Lake shore and proved unhealthy. The present Nyegezi Mission was built in 1929 and 1930. From Bukumbi the White Fathers went to Ukerewe in 1895, and during the next decade to Bukoba and many other places in the Lake Province.

The name Bukumbi, meaning "the place of beads," was not, as many people think, derived from the rosaries worn by the White Fathers. It was so named because a pot of beads was unearthed there long before the arrival of the White Fathers.

Less peaceful was the entrance of the White Fathers into Bukerewe, where the boat with missionaries was received with a hail of poisoned

arrows. They had to retreat, but finally they succeeded in coming ashore at another spot where the people had run away at their approach.

The importance of all these mission stations at the time when the country was not yet pacific can only be realised if one reads the reports of the old travellers. The missions were the outposts of European civilization. They soon became places where the natives did not run away from or fight a European as soon as they saw him.

For the Africans the beneficial activity of all missions, setting aside the religious aspect, cannot be better described than by mentioning the names of the hospitals at Kagondo, Sumve, Kolondoto, Shirati and the first primary schools at Katoke and Ihungu.

Europeans were not the first strange races to enter the country. Many years before they arrived there were Arab traders living in Usukuma and in Bukoba, where the now completely depopulated area of Kafulu in Karagwe was a prosperous trading centre with caravans bringing cloth and beads and taking back ivory. Ivory was the one commodity which was readily accepted by the traders in barter for powder and guns. Any chief in possession of a sufficient number of muzzle loaders could consider himself safe from aggression in tribal wars. Therefore ivory had to be delivered to the chief, just as now it has to be delivered to the Government.

The slave trade did not flourish here as it did on other trade routes. I like to think that the slave traders spared this country because of the good defence put up against it by the inhabitants.

The Arab penetration has left its mark on the country, and in various trading centres, especially in Sukumaland. Arabs, often descendants of the old pioneers, carry on their tradition and help to develop the country. Wherever there is a possibility of growing anything the Arabs have created little oases of fruit trees, and the greatest pride of a white-bearded patriarch is to have a few vines forming a shady pergola.

When the country began to be opened up the Indian traders started to share the trade with the Arabs. They had arrived long before at the coast mainly at Zanzibar and Bagamoyo, where they helped to fit out the expeditions of all the big explorers. Probably the reason for the later arrival of the Indian merchants in the interior is to be found in the form of business which they preferred. They were mainly importers and exporters of goods on a large scale, or they bought wholesale from European importers and they only sent their agents into the interior for retail trading. Their greatest progress was made after the railway was constructed.

Mwanza early became an important trading centre. A photograph taken in 1904 shows a great settlement with clearly a considerable African population, and in 1910 there were said to be 90 Europeans in the town.

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## TRIBAL CALENDARS

By E. C. Baker

Up to the year 1930 one heard the tribal names for the months of the year used fairly frequently by tribesmen in Musoma District though, even then, many were unable to recite them in their proper order. I do not know if they are still in use (one suspects that they have been forgotten by all except a few of the more conservative elders) but it seems well that available information should be recorded for the benefit of anyone who may be interested.

The lists given below were compiled prior to 1930 and are, doubtless, in need of correction and amplification in some cases.

**Ikoma.**

1. Iritaturi.                      The fields are prepared for planting.
2. Tabarari.                      Hoeing is in full swing.
3. Kimaga.                        Planting begins towards the end of the month.
4. Nchota Yebasi.                *Nchota*—star, *Yebasi*—Wanderobo? The height of the planting season. Owing to the rain and the long grass the Wanderobo cannot hunt.
5. Nchota Nkare.                The female star (*nkara*—woman). The big planet descends to eat the *ntarantura* which is a species of *solanum*. There is much rain and the streams are in spate.
6. Nchota Nsube.                The male star descends (*nsube*—man). The floods decrease and weeding begins.
7. Nyambeho.                    The cold season (*nyambeho*—cold). The fields are weeded.
8. Irigo.                          The grain bins are put in order.
9. Akuri.                          The crops are harvested. It is very cold. (*Kukura*—to cry). Those who have no husbands cry because they have no skins with which to cover themselves at night.
10. Igiate or Egete.              The dry season. The vultures' chicks are hatched out.
11. Butiri.                        *Ntiri* are the black seeds worn by the young men. The *Ndimiri* appear (to the best of my remembrance the *ndimiri* are the Pleiades).
12. Kinyariri.                    *Munyariri*—the short grass which appears after the bush has been burnt.

**Isenye.**

Several of the names of the Isenye months are similar to those of the Ikoma but are in different order. Both Wa-Ikoma and Wa-Isenye assured me that their own version was correct.

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|---------------|---------------------------------------------------------------------------------------|
| 1. Butiri.    | Hoeing begins.                                                                        |
| 2. Kinyariri. | Hoeing in full swing.                                                                 |
| 3. Tabarare.  | Cultivation continues and planting begins during the second half of the month.        |
| 4. Tature.    | Planting continues.                                                                   |
| 5. Kimaga.    | Planting continues during the first half of the month and then the fields are weeded. |
| 6. Kiragure.  | Weeding continues.                                                                    |
| 7. Kiro I.    | Weeding is finished.                                                                  |
| 8. Kiro II.   | The crops begin to ripen.                                                             |
| 9. Nyambeho.  | The cold season. The crops mature.                                                    |
| 10. Ikure.    | Harvest-time.                                                                         |
| 11. Rigo.     | The dry season.                                                                       |
| 12. Gete.     | The dry season.                                                                       |

**Bugirango.**

Again several of the months are the same as those given by the Wa-Ikoma and it is now impossible for me to ascertain where the errors lie.

- |               |                                                               |
|---------------|---------------------------------------------------------------|
| 1. Kuri.      | Cultivation begins.                                           |
| 2. Kinyariri. | The fields are cleared.                                       |
| 3. Tabarari.  | Weeding time.                                                 |
| 4. Matuyi.    | Final period of weeding.                                      |
| 5. Kimwamu.   | The heavy rains set in.                                       |
| 6. Kirabu.    | Early reaping.                                                |
| 7. Iheta.     | Harvest time.                                                 |
| 8. Turasahi.  | The millet is reaped.                                         |
| 9. Kigimbi.   | Harvesting is finished.                                       |
| 10. Kuri.     | The half year.                                                |
| 11. Tiria.    | Milk is very plentiful.                                       |
| 12. Ratiga.   | The period of rest before the next year's cultivation begins. |

**Taturu (Tatoga).**

The fragmentary note was supplied by the Wataturu of Musoma District and is given for what it is worth.

|                 |                   |
|-----------------|-------------------|
| 1. Owghow.      | The dry season.   |
| 2. Giripe.      | " " "             |
| 3. Gegashu.     | " " "             |
| 4. Shirijan.    | " " "             |
| 5. Sheshamuk.   | " " "             |
| 6. Sherungwan.  | " " "             |
| 7. Shermut.     | The rains begin.  |
| 8. Shellahe.    | The rainy season. |
| 9. Sherisuba.   | " " "             |
| 10. Shesise.    | " " "             |
| 11. Sheshegesh. | " " "             |
| 12. Shetamwan.  | The rains lessen. |

**Jita.**

|                           |                     |            |
|---------------------------|---------------------|------------|
| 1. Meu.                   | English equivalent. | May.       |
| 2. Bukene.                | " "                 | June.      |
| 3. Omtagato.              | " "                 | July.      |
| 4. Ekongora.              | " "                 | August.    |
| 5. Ommeji.                | " "                 | September. |
| 6. Omufwimba.             | " "                 | October.   |
| 7. Rubingo.               | " "                 | November.  |
| 8. Omuwangara.            | " "                 | December.  |
| 9. Omwirafuru.            | " "                 | January.   |
| 10. Omweru.               | " "                 | February.  |
| 11. Omuhande.             | " "                 | March.     |
| 12. Omuingo au<br>Kaboja. | " "                 | April.     |

It is surprising that the Swahilis, who use lunar months, have not adopted the Arabic equivalents in their entirety. Though the Arabic forms are often heard the Swahili months are called the first, second, third month, etc., up to the ninth and the remaining three bear Arabic names.

| Swahili.         | Arabic.      |
|------------------|--------------|
| 1. Mfunguo Mosi. | Shauwal.     |
| 2. " Pili.       | El Qida.     |
| 3. " Tatu.       | El Hijja.    |
| 4. " Nne.        | Moharram.    |
| 5. " Tano.       | Safar.       |
| 6. " Sita.       | Raby Auwal.  |
| 7. " Saba.       | Raby Tani.   |
| 8. " Nane.       | Ramadhan.    |
| 9. " Kenda.      | Gamad Tani.  |
| 10. Rajabu.      | Gamad Auwal. |
| 11. Shabani.     | Shaban.      |
| 12. Ramadhani.   | Rajab.       |

The coastal people, when converted to Islam by Muslim immigrants, naturally adopted the lunar month used by the newcomers but one wonders whether, prior to their conversion, they used a calendar such as that found among the tribes of Musoma District.

There is one, and so far as I know, only one surviving custom which indicates that such a calendar was formerly in use and that is the Kuoga Mwaka or annual bathing in the sea, when men and women flock to the shore and enter the water with shouts and laughter. According to the elders the custom is observed by the Washenzi, i.e. the aborigines who are now Muslims; the Arabs do not participate though I seem to remember seeing some of the younger African-born Arabs joining the Swahilis in their annual bathe at Pangani. The washing is now regarded as a sign of joy at the advent of the new year but is really a ceremonial cleansing of the body in order to wipe out the old year and its trouble. Strictly speaking sadaka (alms) must be distributed on that day and new fires lighted in every house.

The interesting point is that the bathing takes place on the first day of a year containing three hundred and sixty-five days or, according to Muslim computation, eleven days later each year. My original note was made in 1933 and in that year the Kuoga Mwaka took place on the 5th of Mfunguo Saba; the next year on the 16th and the following year on the 27th of the same month. There seems little doubt that the coastal population used calendar months until conversion to Islam caused them to adopt the system in vogue among the Arabs.

# THE TATOGA OF TANGANYIKA

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\*To be published in No. 35.





This group represents the **raat** of one man, the group who live in close proximity and who fight and hunt together.

## THE TATOGA OF TANGANYIKA

By G. McL. Wilson

## PART ONE

## I. INTRODUCTION

This paper has been written to provide a peg upon which to hang future papers and publications on the Barabaig and other Tatoga groups in Tanganyika. Here I am giving the barest outline of the ecological distributions of the Tatoga and a brief description of their physical environment, migration complex, and tribal organization. The major emphasis will be on the Barabaig among whom I have lived for nearly two years. The other Tatoga groups were very briefly visited but it is hoped that sometime in the future it will be possible to spend more time with each of these groups. The final section is concerned with Barabaig murders and should prove of interest to readers in Tanganyika.

There is very little published material to be found on the Tatoga apart from several short articles in unavailable German periodicals and a brief article in *Tanganyika Notes and Records* by C. H. N. Jackson, Ph.D. A comprehensive bibliography of works mentioning the Tatoga of Tanganyika is included at the end of the paper.

## Origins.

The language of the Tatoga groups has been classified by Huntingford<sup>1</sup> and others as Nilo-Hamitic and of the Nandi type. There is no doubt about the fact that Tatoga were living in the Mount Elgon region some two hundred and fifty years ago, but whether they were Nandi people who had been separated from Nandi for centuries or people of a common generic stock to the Nandi, Kipsigis and Masai, who left the Mount Elgon area in face of the Nandi invasion, I am not prepared to say except that, at the moment, I strongly favour the latter explanation. That they lived on Mount Elgon is proved by a myth which is common to at least three of the sub-tribes to the effect that they inhabited a high mountain from which they could see two large bodies of water (i.e. Lake Victoria and Lake Rudolf). This place was called the land of the rivers and elephants or, in the vernacular, Endabesht. There is a place to be found today called Endabess which was inhabited, say the Nandi, by the Sirikwa. "These people were like the Nandi but not completely Nandi in language and customs and they suddenly disappeared leaving only a small group who became completely assimilated," goes the story of my Nandi informant, Chief Isaiah Keina, at Kapsabet, Kenya. He and his mother are both descendants of the Sirikwa who remained.

There is no doubt about the numerous words in the two languages, Tatoga and Nandi, which are identical but on the other hand there are many linguistic differences of a structural nature which could hardly have occurred within so short a period. Masculine and feminine nouns are found, for example, in Nandi but not in Tatoga. The word order, tense structure, and formation of plurals are different. In any case language is a highly suspect criterion of common origin, especially if it is not backed up by cultural and other data.

The age-sets of the Nandi and Kipsigis can be compared easily to those of the Masai whilst those of the Tatoga are so different that to call them age-grades would only confuse the reader. It is better to refer to them as generation names. These named generation groups did have limited functions in time of war but certainly not on the organised scale or efficient system of the Masai and Nandi age-sets. A generation name of the Tatoga forms an exogamous horizontal group in that society and this is its chief function. That a generation group of this nature should have evolved in a purely pastoral society is consistent with their form of social organisation and I hope to make this a thesis for a future monograph on the Barabaig to be published in a journal concerned with anthropological theory.

The circumcision ceremonies are different between the two groups but it is doubted whether they have always been so. Today, or rather in the recent past, the Nandi circumcised on the Masai pattern which demands unflinching courage of the youths. The Barabaig boy, on the other hand, is expected to make as much noise as possible to solicit the aid of the ancestors, male and female, to help him through the ordeal. There is a picture in Hollis's "Nandi" facing page 52 (plate xxi) of a Nandi boy who had recently been circumcised. This picture could be a Barabaig boy holding the traditional thorn switch during the period of licence and freedom he enjoys after circumcision. These boys are known as *mudamuiek* and the switch is called *wapkant*. The *wapkant* is used to demand favours from the young women of the tribe. The Nandi elders questioned, however, professed not to know why the Nandi boy was holding the switch, or its name, when shown the picture.

One striking similarity was found in the attitude to iron working. The Nandi in the recent past and the Barabaig today rely for iron work on a special clan or sub-tribe, the Gidanwodik.<sup>2</sup> The avoidances of the iron-maker's tools, his person, his house and his daughters are found to be the same in both societies, although these avoidances have been overlooked in recent years by the Nandi. Further, the Gidanwodik marry endogamously whereas all other clans marry exogamously. Perhaps it is best to regard them as a sub-tribe although, unlike other sub-tribes, they have no territorial identification.

Another similarity is the clan of rainmakers, the Ghowu in Nandi, the Ghowok in Barabaig. These two clans, the Gidanwodik and Ghowok, were found in every one of the Tatoga groups which I visited with the exception of the Salagwajek at Salawe who are completely Sukuma-ized. The Daremajek clan, which is the medicine clan, is also found throughout Tanganyika but was not known in Nandi.

There were many similarities found among the terminology for cattle. In both Nandi and Tatoga the word *samoi* means a brindle-coloured animal and *samoient* in Nandi is the plural, *samohent* is the plural in Barabaig and is also the name of one of the largest clans, meaning, the people who came with brindle cattle.

Politically many terms were found to be the same in Tatoga and Nandi. The names for the recognised leader of a clan council *girwach* (B) and *girwach* (N); the name for the council, *girwageit* is the same, as is *njogot*





Barabaig maidens wearing only the cloak. Notice the exceptionally fine beadwork. There are at least three hundred shillings worth of beads worn by the girl in the foreground: each row of white beads is alternated by a row of red ones. The red does not stand out well in the photograph.

(B), *njogeit* (N), the name of the fine imposed by the clan elders on a member. The Nandi today call their chief *girgwagir*, which means in Barabaig, the speaker in a clan or other council, the Barabaig have borrowed the Sukuma word, *mutemi(t)* or *mtemit*.

The words used for the parts of the body both for animals and humans are very closely related. The hump *ukta* (N) and *huck't* (B), of a bullock sacrificed on any special occasion is eaten by the most important elder of the clan in both societies. The name for the part eaten, the centre portion, is *gigwengwen* (N) and *gigwengwesind* (B).

There are, however, several words common to both but with significant differences in meaning. One such word is *lugeit*, which means warriors in Nandi, and *lugweig*, the enemy, in Barabaig. Another is the term *gargweit* which in Nandi means an old woman, in Barabaig, a venerable old man. Kinship terminology is purely descriptive in Tatoga but classificatory in Nandi.

So much for similarities and differences between Tatoga and Nandi. The fact is apparent from linguistic and cultural material that they are of the same basic stock and that they were formerly in contact with each other. This writer hesitates to say more, but it is understood that Mr. G. W. B. Huntingford will shortly be publishing a monograph on the Nilo-Hamitic groups in Kenya and Tanganyika and it is hoped that he will throw more light on the ancient migrations of these interesting people. It must be made clear, however, that the Barabaig are definitely not Jaluo as stated by Father Crazzolaro in his recent work on the Luo.

### General Characteristics

What is to follow on general characteristics, appearance, temperament, nutrition, house types, etc., applies to all of the sub-tribes except those at Salawe, Itigi and Muhalala, where the Tatoga have married Bantu wives for generations. In other areas intermarriage has taken place but not on anything like the same scale.

The appearance of the Barabaig varies greatly as it does among most people; some are tall, some are short, some are thin, some are fat. Their skin colour ranges from black through light brown to bronze. One is struck with a "type," however, which one usually describes when asked what these people look like. The typical Barabaig is tall, muscular and well developed. I am five feet and eleven inches tall and a goodly number of Barabaig males are taller than I and many women approach my height. There are a few exceptionally tall men measuring six feet and three inches or more and the occasional individual at five feet. Average women, I should estimate, range between five feet and five inches to five feet and seven inches, whereas the average male ranges between five feet and nine inches to five feet and eleven inches.

The Barabaig are a cattle people and consequently the average standard of nutrition is comparatively high. Unlike most Tanganyika peoples, their diet is notably high in animal protein, blood and milk being the chief food supplemented by meat from sheep, goats, cattle and game. This was their

sole diet until comparatively recently. Even today a goodly proportion of the Barbaig do not depend in the least on maize, although they are increasingly developing the taste for it. No medical research, to my knowledge, has ever been carried out among these people. Therefore it is difficult to say accurately whether their standard of health compares favourably or unfavourably with surrounding peoples. Apart from a supposedly high incidence of venereal diseases there have not been any epidemics recently of the more common contagious diseases nor a high incidence of illness. Bubonic plague hit one area in November, 1951, and forty-six people died before it was brought under control. This, however, has little to do with nutrition.

I have accurate figures of a one hundred percent sample of the Barabaig homesteads in a border area which reveal that the one hundred or more married women living there, had borne over six hundred children between them, of whom over three hundred had died. This high figure of infant mortality is due, I feel, more to habits of personal hygiene than to nutrition. An actual statistically accurate breakdown would certainly reveal more. My sample was one hundred percent and therefore included women just married, in their teens, and others ready for the grave.

It is difficult to discuss habits of dress and personal hygiene from our ethnocentric point of view. The first reaction of most Europeans is that the Barabaig women smell. They do—it is because the animal skins with which they clothe themselves are cured in urine, preferably that from a pregnant woman. A well-made Barabaig cloak and skirt, however, would be admired by the finest Parisian houses of fashion or by Christian Dior himself—apart from the smell. These garments are also practical, they shed the rain well and they are warm and protect the individual from the high wind which blows at near gale force for several months of the year. When working, the women strip to the waist, the men simply strip. Unmarried women of all ages do not wear the skirt, only the cloak, but it is unusual to see either males or females of any age stark naked away from their homestead unless, of course, the men are working the wells or cutting trees. The men wear a large sheet of white cotton cloth, *hank't*, usually dyed with red ochre and impregnated with clarified butter. The *hank't*, if one is in style, should be capable of completely covering all the anatomy. A well dressed male will wear sixteen yards of thirty-six inch material sewn in such a way to measure four yards by four yards and this is often fringed all around with tassels.

Women of the Buradik, Banjut, Iseimajek and Rutageink on the Wembere and Sibiti do not wear the cloak but have taken to wearing a black light cotton cloth, *hank't*. Many of these are studded with designs worked into the cloth with small pieces of brass wire. The men also appear to prefer black. The women say that in the old days their grandmothers wore the leather cloak but because of the heat in the vast low-lying plain that they now occupy they have discarded it. Married women still wear the traditional gored leather skirt.

Habits of personal hygiene vary greatly among the Barabaig. Some could be grouped among the dirtiest primitive people that I have ever encountered, while others are among the cleanest. I have eaten in some





Barabaig women are self-possessed, aggressive and independent.

homesteads where warm water was first brought to wash face and hands and in others where I was hardly able to eat because of the filth. Again it is possible to generalize by saying that when water is available most Barabaig wash; when it is not, few go to the trouble to make it available.

The sanitary habits of the natives are primitive but not as injurious to health as among primary agriculturalists who keep animal and human manures for their farms. Young children learn at an early age that, by their own standard, one should not be seen in the act of defecation. They are taught to dig a hole in the ground away from the homestead or footpath and defecate there and then cover it over with earth or twigs. What is injurious to health is the habit of keeping all young stock in the women's hut, where the young children also sleep. Bovine diseases such as ringworm, tuberculosis, and anthrax can be carried in this way and scabies are also common. Consequently a large number of the Barabaig suffer from skin and eye diseases of one kind and another. The spirillum tick is, unfortunately, an uninvited guest of every homestead.

Barabaig have been accused of being lazy by both administrative and specialist officers. Their Native Treasury roads are without doubt the worst in the Northern Province, due not so much to laziness, as to the fact that few of them understand how to use a hoe or are used to working with earth. Give them an axe, as on the tsetse bush clearings, and they are outstanding workers. If one could see them on a lion hunt, chasing through scrub thorn bush for hours in the blazing sun, oblivious of the discomforts of scratches, thorns, antbear holes, and heat; or watering their cattle from wells thirty or more feet deep; it would be difficult then to say that they are lazy. True, they prefer to graze their cattle ten miles and back to surface water rather than to use a well a few miles away, but then their women and young boys can do this whereas they are not permitted by custom to work the wells. Furthermore, having to work interferes with the interminable series of councils, beer drinks and festivals which highlights the dry season.

Barabaig are amazingly rational, especially as young adults. They question their traditional ritual values, religious attitudes, and even their lot within their culture. This gives rise to covert under-currents of dissatisfaction and overtly causes continuous tensions, especially about the disparity of wealth, distribution of inheritance and status. The young men and women are aggressive, quick to anger, and if they have been unjustly treated by their own standard, which is not far removed from our own, they are very slow to forget and often as not take matters in their own hands and avenge themselves. Most Barabaig elders have at least one scar and often several on their heads, testifying to their aggressive nature.

The Barabaig women are self-possessed, aggressive and independent, I have often talked at great length with an elder only to have his wife tell me afterwards that most of what the old boy told me was lies and she would go on to tell me the truth. The old women, past child-bearing age, have great influence in clan proceedings, especially if they can count a goodly number of descendants. They are often found to have a fount of genealogical and clan knowledge which surpasses many male informants. When they die however, unlike the old and successful men, their spirits have no influence at all on the welfare of the tribe.

## II. THE DISTRIBUTION OF TATOGA ETHNIC GROUPS IN TANGANYIKA

Tatoga is the generic name of the large number of small scattered groups of pastoralists which are found in Northern Tanganyika. They regard themselves as Tatoga but their Bantu neighbours refer to them as Wataturu or simply Taturu. These sub-tribes of the Tatoga are numerous and it is possible that others exist that have not yet been recorded.

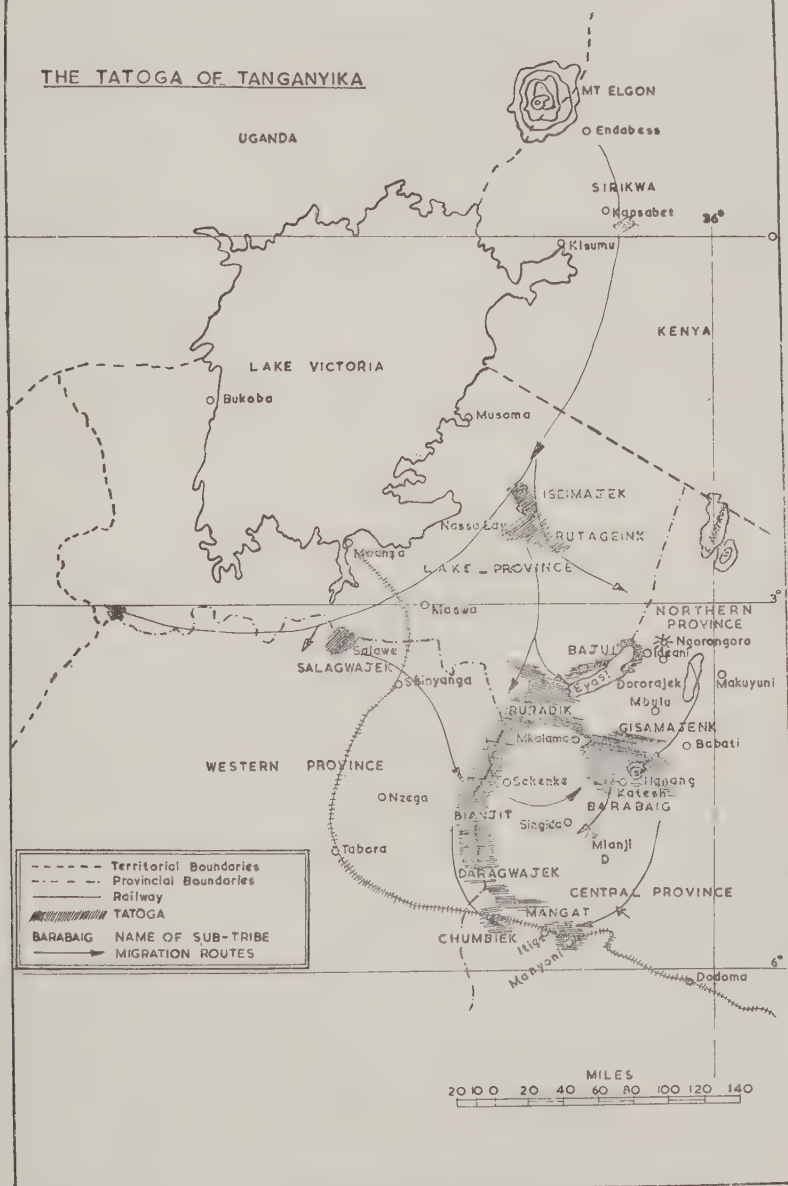
The Tatoga seem to have a word for everything, which is convenient for the Anthropologist bent on describing the various groups which make up the society. The largest group is "the people as a whole," or *Tatoga*, singular, *Taturnyant*. Next the sub-tribes are called *eimojik*, or singular *eimochant*. The following sub-tribes have so far been discovered, the Iseimajek and Rutageink in the Ruwana valley in Musoma District; a remnant of the Sirikwajek, who have been completely assimilated by Nandi, living in the Mount Elgon and Kapsabet areas of Kenya; the Buradik and Bajut in the Maswa, Nzega, Singida and Mbulu Districts living in border areas formed by the Eyasi, Sibiti and Wembere complex of swamps and rivers; the Bajut and Dororajek at Mongola and north of Mkalama; the Daragwajek, Reimojik, Mangat'k, Ghumbiek and Bianjit, living in the lower stretches of the Wembere and at Itigi and Muhalala; the Gisamajenk at Dongabesh, Bashonet and Karatu; the Salagwajek at Salawe in the Shinyanga District; and finally the Barabaig, the only group with a definite political boundary and a Native Authority, in Mbulu District at Katesh.

### The Sirikwajek

It has already been mentioned that some two hundred and fifty years ago the Tatoga lived in the Mount Elgon, Kapsabet areas of Kenya. Both the Nandi and Barabaig have historical myths connected with these people. The Nandi say that they were a populous cattle people who suddenly migrated leaving only a small remnant group which has become completely assimilated to Nandi. Chief Isaiah Keina and his mother, of the Kapsabet District, are descendants of this remnant. Chief Isaiah said that in the past his clan were known as *sirikwa kap gabandot*. In Barabaig this would be stated as: *gaban dosh't gaba sirkwa*; meaning, I am from the gate of the clan or sub-tribe Sirikwa. Furthermore, *siriki* in Barabaig means, old fashioned, or the way of ancestors. An elder, Hena Misai of Itigi, stated definitely that his sub-tribe, the Mangat'k, and another, the Ghumbiek, were originally called the *sirikwajek* before they "became many so divided."

The origin of the word *Mangati* now comes into question. We have always assumed that it came from the Masai word, *ol-mangatinda*, plural, *il-mangati*, meaning respected enemy as recorded by H. N. M. Harvey in the *Tanganyika Police Review*, No. 1, Volume one, page 19. When I asked a member of the Mangat'k sub-tribe, "Giwosji ana eimochant?" (what is your sub-tribe?), he replied, "*Gaba Mangatiga*." (I am a Mangatiga), the singular of Mangat'k. This sub-tribe formerly lived in the Ngorongoro and Katesh areas and it is quite possible that they had contact with the Masai there. Today, however, the sub-tribes at Itigi state that Mangati is the name given erroneously to the Barabaig by the European.

# THE TATOGA OF TANGANYIKA





Iseimajek and Rutageink<sup>3</sup>

These groups, although close neighbours occupying the Ruwana valley and surrounding country are, according to informants, bitter enemies. The Iseimajek are fish eaters and have songs and ceremonies praising fish and prayers placating the ancestors to bring abundant supplies of them; whereas the rest of the Tatoga groups maintain a fish avoidance equating them to snakes. The Iseimajek are a small *eimochant* numbering about one thousand, only half of whom live in the Ikizu and Issenge chiefdoms of the Musoma District while the rest are widely scattered throughout the other Tatoga areas. They are immediately identified by other Tatoga by their peculiar lisp when speaking. The Rutageink at Ruwana are more numerous than the Iseimajek but few are to be found in other areas. The Tatoga refer to this group as living at "Luank" and here the *sid a huck't* (leader of the sub-tribe) of the Rutageink lives, one Gichabot Gabadanyek. The Rutageink and Iseimajek, of the Musoma District, together numbered 1,300 at the 1948 census. If, however, these *eimojik* are like the rest of the Tatoga, then the census figures can be doubled because the Tatoga, who live in not easily accessible areas, pay taxes only if they are forced to do so and moreover avoid contact with those who are bent on counting them or their cattle.

Salagwajek<sup>4</sup>

This group, although they themselves do not recognise the name, have been referred to by many informants as the Salagwajek and live at Salawe in the Shinyanga District of the Lake Province. The 1948 census puts the population at 1,341 and it is possible that this is accurate in that the Salagwajek have been completely assimilated by the Sukuma and have lost every vestige of Tatoga language and custom. Indeed one would not know they were Tatoga apart from the fact that they and the Tatoga say that they are. It is known, however, that their genealogies reveal, in the fourth and fifth ascending generations, Tatoga names. Informants at Salawe told the writer that a former chief, Ntenga Kabelele, in German times made annual pilgrimages to Gidamowsa, the famous old witch doctor who lived at Basotu and who was hanged by the Germans for his political and magical activities. That involved the chief in an annual safari of over two hundred miles for medicines and advice. It is further stated that this chief and his family could speak the Tatoga language. The writer was astonished to hear that the grandson of Gidamowsa, Gidananan, the wealthy present-day leader of the Bajut *eimochant* at Mangola, Mbulu District, made a visit to Salawe in 1949 to revive interest in his medicines and political direction. Here he was welcomed and given traditional hospitality by the father of the present chief, Keyu Shija.

Another interesting facet of the Salagwajek is that the first Tatoga was Salahog—*Salagwajek* meaning the people of Salahog. Although the Salagwajek have lost all of the Tatoga clan and generation structure, they could remember the word for an elder's generation, which is *ishima* in Tatoga. Further they claim that their ancestors came from the Bukoba area where they were driven out by the Watusi from a place called Nyalwelwe near the Urundi border. I have not yet been able to identify this place name on any map.

Salagwajek is really an atypical group and therefore will not be considered further for the purposes of this paper. They have been completely absorbed by the Wasukuma and present an example of what will happen shortly to those Tatoga living among the Iraqw and also what has all but happened to the Ghumbiek, Bianjit and Daragwajek at Itigi and Manyoni.

#### Buradik, Bajut and Dororajek

The major concentration of these three *eimojik* is the Eyasi, Sibiti and Wembere complex although a few may be found in other Tatoga areas. The 1948 census records 318 in the Unyambiu chiefdom, Nzega District, and 928 in the Kimali and Meatu chiefdoms, Maswa District. This is a gross under-estimation for at least another two thousand can be found in these areas. These sub-tribes under the leadership of Gidananan Upati, a Bajut of Mangola, Mbulu District, and Gitaros Gijank, a Buradik of Loya, Tabora District, appear to enjoy their relative safety from Government interference by living in the excellent cattle country provided by the vast marshy low-lying plains which stretch from the Southern shores of Eyasi to Itigi, a distance of some two hundred miles and inaccessible to Government officials for most of the year. It is unfortunate for the future of the Tatoga that some form of government could not be instituted in this vast no-man's-land and a tribal boundary laid down. One of the problems is that the area borders on the Mbulu, Maswa, Nzega, Tabora, and Singida Districts. To reach an agreement on such a border would therefore be impossible.

The Dororajek are a small *eimochant* who broke away from the Bajut and formerly inhabited the Karatu area of the Mbulu District before the encroachment of the tsetse fly. Today they are scattered throughout the other Tatoga groups. They are found living in greatest concentration among the Bajut on the Sibiti, north of Mkalama.

#### Ghumbiek, Mangat'k, Reimojik, Daragwajek and Bianjit

These five *eimojik* are listed in the 1948 census as numbering 1,912 at Itigi and Muhalala. This is no doubt correct. Members of these *eimojik*, however, can be found throughout the Singida side of the Wembere as far north as Sekenke with scattered groups at Tulia, Ntwike, Ngongila, and Endamotoa. The Bianjit are said to be a very small but old *eimochant* who, because of their lack of cattle, are chiefly cultivators. The Ghumbiek and Mangat'k are the people of Ghumbangaing, an early Tatoga ancestor, brother of Salahog, who it is claimed was the first to enter what is now Tanganyika in the neighbourhood of Fuadi (the Tatoga name for Ngorongoro). There they were called Sirikwajek (i.e. the Sirikwa of Mount Elgon). They appear to have arrived in the Itigi area some two hundred years ago and are now almost completely assimilated by the local Bantu in house types, custom and family organisation. The generation names, clan names, and an intelligible dialect of their former language are still apparent. They have not yet become unidentifiable as have the Salagwajek of Salawe or the Sirikwa remnant of Elgon but it is just a matter of time before they will be completely absorbed by their Bantu neighbours.

#### Gisamajenk

It is difficult to understand the rapid disintegration of the Gisamajenk of Dongabesh in the last fifty years in the face of Iraqw and Government

pressures and the encroachment of the tsetse fly. The Gisamajenk were formerly a war-like, thieving sub-tribe who attracted many scattered groups of Tatoga who came to their area for protection. Today they number barely four thousand souls. When the early German explorer, Dr. Fritz Jaeger,<sup>4</sup> visited the area at the turn of the century they must have made a lasting impression on him by their numbers and physical characteristics. He seems to have spent considerable time among them and took the trouble to describe them in some detail and also to record many photographs. He called them the Wambulu and he scarcely mentioned the Iraqw who have overrun the area.

Early German maps refer to this district as the Tatoga Plateau. Today, however, it is almost completely inhabited by the rapidly increasing Iraqw. The last vestige of unity was lost a few years ago when the Gisamajenk chief, Gitageno, was replaced by an Iraqw sub-chief and the Native Treasuries combined. Today the Gisamajenk have not even a headman in an area which was indisputably theirs less than fifty years ago.

Furthermore they are being rapidly assimilated by the Iraqw, most of them are bi-lingual and it is difficult to find a Gisamajenk in the Mbulu District who has not Iraqw blood. Their customs are changing rapidly and with forty years of Mission work among them many are Christians. They still hold to their clan and lineage structure, however, and at the time of writing are making desperate efforts to recover political control of what appears to be a lost cause.

It has been said by many informants that the Barabaig broke away from the Gisamajenk fifty to sixty years ago. The myth which explains the separation varies depending on whether the informant is Barabaig or Gisamajenk. However, it is now established that only a small section of Barabaig were formerly Gisamajenk and these were taken in by the bulk of the Barabaig who had complete control of the area known as the Barabaig Steppes, below the escarpment, for the last two hundred and fifty years at least. These Gisamajenk clans can still be identified although they are now regarded as Barabaig.

The Gisamajenk, in this writer's opinion, formed a later migration than the rest of the Tatoga groups and their customs are certainly more in line with Nandi. They were expert bowmen and arrow makers whereas the rest of the Tatoga relied mostly on the spear and stick. Further, their shields were more highly developed and used for fighting, whereas among the rest of the Tatoga the shield was an ineffective defensive weapon and rarely carried in war. Moreover they also had a highly developed knowledge of poisons, which is not found among the rest of the Tatoga. The Gisamajenk have songs describing enemy raids which include the Tatoga among their enemies. Finally they were, as far as can be ascertained, partial cultivators when they came to the area, an aspect of economic mode which is only now beginning among most of the other Tatoga groups.

Today many Gisamajenk have left the Dongabesh area and scattered groups are to be found in every other Tatoga sub-tribe apart from that at Salawe. They are to be found in the border areas of the Singida-Mbulu

Districts in small settlements and also along the Bubu River to the south of Barabaig in Gorowa country.

This description of the *eimojik gaba Tatoga* now brings us to the Barabaig whom I shall go on to describe in fuller detail. It should be remembered, however, that not all of what is said about the Barabaig can be applied to the rest of the *eimojik*. Most is applicable to the Gisamajenk, Buradik, Bajut, Dororajek and Rutageink, however, and can be relied upon as a fair description of their tribal structure as well as that of the Barabaig. The Salagwajek, Bianjit, Daragwajek and Ghumbiek are so assimilated by their neighbouring Bantu that it is difficult to say how much of the data is or is not applicable without further study. Certainly it will provide a fair description of their former culture.

### III. THE MIGRATION COMPLEX

#### Introduction

Despite the wide scattering of Tatoga groups in Tanganyika they still maintain a degree of contact which is quite unique. This has been noticed by many specialist officers; for example Mr. I. B. Pullen of the Veterinary Department noticed with interest that whenever bovine epidemics broke out among the Tatoga cattle on the Sibiti and Wembere, they could expect a similar outbreak about two months later in the Ruwana Valley roughly one hundred miles away.

The Salagwajek at Salawe, although completely assimilated by the local Sukuma, are still proud of the fact that they are Tatoga and welcomed the leading medicine man, Gidananan, to their fold only two years ago. Their chief in the past made annual pilgrimages for medicines and advice to Gidamowsa at Basotu. This maintenance of social ties between *eimojik* has become more difficult today, however, and the Tatoga at Salawe will be forgotten in the not too distant future.

Apart from the maintenance of social contact the migration complex of the Tatoga must be considered at three levels. The historical migrations of the Tatoga people from Kenya and their settlement in Tanganyika is one facet which must be coupled with data on the segmentary principle in Tatoga society. What has caused the wide scattering of autonomous groups which claim territorial grazing and water rights and each of which regards itself as an unique unit, *eimochant*, of the Tatoga as a whole? The second level is the semi-permanent migration patterns found within the territories of each *eimochant*. Why do groups of Gisamajenk, for example, leave "en masse" from Dongabesh and settle one hundred or more miles away in the Wembere area of the southern Singida District? The third level is the seasonal migrations or semi-transhumance pastoralism practised by all of those *eimojik* who have not yet taken to agriculture.

#### Historical Migrations

It is always dangerous to elucidate on historical migrations and, although they present a useful and interesting mental exercise, it is difficult to speak of such reconstructions as factual or scientific. The migrations





Barabaig country. Mt. Hanang in the background.

of the Tatoga are, however, quite clear over the past two hundred and fifty odd years. Where they came from before that is a matter for speculation and beyond the scope of this paper.

Another point which has always interested me is the assumption by anthropologists and others that migrations are necessarily slow whereas several migrations of Tatoga which were observed by this writer were anything but slow. Last year, for example, a group of Barabaig families were burned out of the Hanang area by a bush fire. In less than two days they were settled thirty-six miles away in homesteads which, to the casual observer, might have been there for many years. Many Gisamajenk families were met living among other Tatoga groups several hundred miles from Dongabesh, which journey took them less than ten days.

When we say therefore that the Tatoga formerly inhabited the Mount Elgon area of Kenya and left suddenly, it is possible that within a month they were settled peacefully on the slopes of Hanang Mountain in the Mbulu District, which is about five hundred air miles away. The first groups which arrived at Hanang Mountain and grazed into what was called the Barabaig Steppes by the Germans were Mangat'k and Bianjit. The latter means land or territory. They must have arrived and been well settled before Ruida, a Buradik, the eponymous founder of the largest clans in Barabaig, arrived there about two hundred and fifty years ago. Ruida found the Hanang area already occupied by Tatoga groups of the Bianjit, Daragwajek, Mungat'k, and Ghumbiek who were living among an agricultural people, the Gobreik, the Tatoga name for the Gorowa.

Informants state that when their grandfathers were alive the whole of the Barabaig Steppes were fly-free to Itigi and thus the whole area formed by the Eyasi, Sibiti, Itigi, Bubu, Basotu, Hanang and Yaida swamps was used by the Tatoga as grazing. The Bianjit used what is now called Mianji dam, south of Singida, as their permanent dry-season watering point before the lake burst its bank and disappeared fifty or sixty years ago. The Ghumbiek migrated from the Hanang area because of conflict with Ruida and his followers to the Itigi-Manyoni area where they found the Daragwajek already installed. The closely related sub-tribes which are found there today followed them shortly after. They were cut off from the rest of the Tatoga by the encroachment of the fly along what is now the Mbulu-Kondoa, Mbulu-Singida border. The Barabaig within the memory of aged informants enjoyed grazing through to Singida where there was adequate water. Nyangura, the founder of a large and influential clan, Hilbanyangura, regarded what is now Singida as his clan waters: the word Singida is the name of one of his sons who lived there for many years. The honours of this great war chief, Singida, are still sung by the Barabaig in their tribal war songs. His name means zebra, *singieida*, because he was born on the day a zebra was killed for medicines for his mother.

To the north of Hanang the powerful Gisamajenk of Dongabesh regarded their territory as including the eastern shores of Eyasi and Ngorongoro as well as the Yaida and Dongabesh to the escarpment. Several other *eimojik* lived with them for protection. Groups of the Iseimajek, Bajut, and Buradik were followers of the Gisamajenk until Ghambameid, a son

of Ruida, defeated the Gisamajenk at a place called Dabil at the foot of the Mbulu Escarpment. During this battle the group which followed Ghambameid killed all of their enemies who were wounded or captured by beating them with sticks. From that date the followers of Ruida, who were originally Buradik, were known as *Barabaig*, meaning those who kill with sticks. We are able to place the rough date of Ghambameid by many genealogies which count back ten generations from men in their thirties. Barabaig marry in their late twenties so we can roughly estimate the time of Ghambameid as two hundred and fifty years ago. Ghambameid, unlike Ruida, Salahog, Ghumbangaing, and other mythical ancestors, did exist and his grave is still placated not only by members of his own clan and sub-tribe but also by individual Tatoga from several *eimojik*. The Tatoga groups at Itigi claim him as an ancestor although genealogies do not verify the fact.

### Semi-permanent Migrations

Barabaig rarely move into strange country on their own but rather in groups of families, *gheida*, which are usually found to be related either by agnatic or affinal kinship ties. It is not unusual to find several young men who are married to sisters or who have the age group relationship of the *raat*, that is, they have killed together, emigrating together with their families.

The Tatoga move for a variety of reasons. When asked they often reply that in their new-found land there is plenty of water and grazing. This is a supplementary reason; the chief reasons being overcrowding in their land of birth and/or the encroachment of an agricultural people. Sickness among children or cattle of the *gheida* is sufficient reason to leave one area and to settle elsewhere. To migrate is the indigenous solution to these problems by the Tatoga. Family, lineage, and recently Government conflicts, provide incentives to move. This is the only traditional answer to the patriarch of a lineage segment if conflict occurs and a basic aspect of the segmentary principle in Tatoga society. The fact that the Tatoga have high mobility tempers the authority of the autocratic lineage heads. Another major cause of emigration is the news of relatives who have already emigrated and who have been successful in their newly found area. Others are encouraged to join them. Furthermore, a wealthy man collects clusters of younger sons of men who have few cattle. These young men, *somnyant*, plural *somnyek*, who have little to gain from their own pater adopt the wealthy leader and work for him in the hope that he will help them establish their own homesteads. The Tatoga also move to escape the multitude of rules and regulations of the modern Native Authority, such as road work, fly clearing, agricultural schemes, dam building, etc.

Migration is an inherent cultural pattern of the Tatoga which can be seen from their wide and scattered distribution from Kenya to Manyoni, from Mbugwe to Lake Victoria. Today, however, a political consciousness is beginning to develop among the sub-tribes, no doubt due to the loss of freedom to migrate which has come about as a result of bovine disease control and other Veterinary Department rules. Another factor which militates against migration is the political development which has taken place among those people with whom the Tatoga groups live. These groups

are able, by Native Authority ordinance, to control immigration to their tribal lands and because of this many Tatoga groups have been forced to settle more or less permanently in one area.

Unfortunately, unlike their brother pastoralists, the Masai, the Tatoga have no vast area protected, preserved, and developed for them by Government. This is obviously due to their wide scattering and lack of indigenous political organization which the Masai have through their age-sets, and laibons.

### Seasonal Migrations

These *eimojik* of the Tatoga who do not practice agriculture have evolved methods of seasonal grazing and conservation which are practical adjustments to erosion and seasonal rains. Briefly, in Barabaig these methods are to graze into the low-lying swampy marsh lands as the rains begin in November and to leave the highland well-watered areas of Hanang Mountain for the dry season grazing. These rules are enforced in each area by clan or community councils of elders, the *gisjod*. The Buradik, Bajut, Bianjit and Daragwajek are forced to reverse the practice because of physical factors. These sub-tribes graze the highland areas at the peak of the rainy season and then begin a slow migration into the Sibiti and Wembere plains as the waters recede. They remain in these vast marshlands until the rains begin in October and then retreat slowly, as the marshes fill up, to the highland areas where they arrive when the rains are once more at their peak.

(To be concluded in No. 35).

### NOTES

1. Mr. G. W. B. Huntingford of the School of African and Oriental Languages.
  2. For comparative purposes I have written all Nandi words phonetically using the same orthography which was used to record the Barabaig language and not as written by Hollis or Huntingford.
  3. Time did not permit of a visit to the Ruwana area; however, I met many Rutageink and Iseimajek informants in other areas and was able to get an adequate picture of the *eimojik* from them.
  4. A note from the District Book at Shinyanga: "The Salawe people originally came from the west (from Nyalwelwe in Urundi). Musingini, the first chief of Salawe, quarrelled with the Mutusi chief, Luhenda of Nyalwelwe, and was defeated and driven out. Travelling east he eventually settled in Salawe."
  4. Jaeger, Fritz; *Das Hochland der Riesenkrater Und Die Umleigender Hochlander Deutsch-Ostafrikas*, Published Berlin, 1913.
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## The Habitat-distribution of the Birds of Northern, Eastern and Central Tanganyika, with Field Keys.

By N. R. Fuggles-Couchman, M.B.O.U.

In presenting this paper I hope to show, to those who have more than a passing interest in birds, that there is a greatly increased interest in them and value in their observations, if they relate the individual bird to the environment in which it has been seen. It is not the mere fact of knowing the bird which is the attraction of ornithology, but of learning something of the bird's biological background. Moreover, a knowledge of the environment in which certain birds are to be found is an aid to their identification, or conversely when entering a certain type of country one knows which birds to look for, and those which are unlikely to be found there. A record of a bird not normally found in a certain habitat then becomes of considerable interest. For instance, in January 1943, Hugh F. Elliott and I were studying birds on the new Meserani dam in Masaia and identified and collected a Terek Sandpiper (*Terekia cinerea*). That species, a palaearctic migrant, had never before been noted in East Africa away from the coast, and was so unlike the birds we expected to see that it immediately drew our attention. As an observer's knowledge of the distribution of East African birds grows, he becomes more and more on the lookout for birds which have been recorded elsewhere in East Africa but which may not have been found in his own district. Here again a knowledge of the habitat of these birds is an aid to knowing where to look for them.

The detailed background of this paper is largely limited to the Northern, Eastern, and Central Provinces with which I have been familiar for more than 18 years, but much is also drawn from the extensive and detailed studies made by R. E. Moreau (see bibliography) in the distribution of birds in Tanganyika Territory, especially that of forest birds. The principles underlying the study of ecology naturally have a world wide application and the bird-plant communities discussed can be found all over the Territory, although somewhat modified specifically according to their geographical position.

Ecology may be defined as "the study of an organism as a whole in relation to its environment" (1). The environment will be a synthesis of various factors, climate, soil, geography, altitude, all of which condition the composition of the vegetation, which in turn generally determines the incidence of the fauna. A study of plants shows that certain species will be found grouped together in "associations". The commonest plant in an association is known as a "dominant" and gives its name to the association.

A well known association in Tanganyika is the "miombo" woodland in which trees of species of *Brachystegia* and *Isoberlinia* sp. are either individually or co-dominant. Another is the much closer bushy woodland of the Moshi area, where *Combretum* spp. are dominant. Plant associations do not, however, always cover extensive areas, and one may give place to another in a comparatively small area, or islands of one may be found in a large area of another. One may instance here the occurrence of patches of coastal thicket which are found in large areas of poor shrubby grassland

on the coast, although some of these may be the remains of large areas which have been cleared in the course of time by the local cultivators.

Superimposed on the plant communities are the insect, reptile, bird and animal communities, all inter-related through such factors as food requirements, climate, and altitude.

Thus certain species of sandplover and sandpipers are found only on the seashore or lake edge, snipe whether in Europe or on migration in Africa are largely confined to marshy areas, because of their food requirements, the Ashy Starling, Vulturine Guinea-fowl, and Tit-babbler are characteristic of dry semi-arid areas while Johnston's Sunbird, the Mountain Chat and Golden-crowned Canary, are only found at higher altitudes. But how far each of the factors mentioned affects their distribution we do not know, nor whether still other factors are operative.

In this paper the particular relationship between birds and their environment will be described mainly on a bird-plant community basis, but it should not be inferred that those two groups form isolated associations which can be analysed without reference to the other groups of the animal kingdom. For instance, while some birds are almost wholly fruit eating, large groups are insect eaters. Moreover birds themselves prey on other birds and are themselves preyed on by reptiles and various animals.

The study of bird-ecology in Africa is a comparatively recent development. Chapin (2), working in the Congo, studied bird distribution from an ecological viewpoint. He has been so ably followed by Moreau, in Tanganyika, whose studies of bird distribution in the Territory were at all times based on ecological criteria. But Moreau (3), after discussing the several factors potentially affecting bird distribution, admits himself at a loss to give a rational explanation of it. He says, "if I were called upon to declare my convictions in the matter, I could only say that temperature and humidity have a lot to do with it, but I cannot decide how; that *vegetational formation, itself largely dependent on geo-morphology as well as on both temperature and humidity, is a prime indicator and prime determinate of the bird population in any particular spot, but that vegetational composition within the formation is far less important*". Until much more is known of the climate of large areas of Africa, and the local variations in what Moreau terms the standard climate of a given habitat, and until more is known of the biology of certain birds typical of various habitats, one is compelled, in describing the distribution of the birds of the Territory, to relate them to the vegetative formations in which they are found.

The following factors may all have bearing on the distribution of birds.

- (a) The presence or absence of suitable food and nesting sites.
- (b) Climatic factors, humidity, light, temperature, pressure, wind.
- (c) Vegetation.
- (d) The eco-climate (Moreau) (4).

The presence or absence of suitable nesting sites must obviously condition the distribution of some birds, such as the Giant Hornbills (*Bucanistes cristatus* and *bucinator*) which nest in holes in trees. Trees large enough to contain suitable nest holes are practically only to be found in evergreen forest, which is the habitat of those species. But the lesser hornbills also nest in holes in trees, but do not enter evergreen forest for that purpose. Birds relying on tall upright grass for the support of their nests, such as the Bishop birds (*Euplectes* spp.) will be absent from short grass areas. But the last species is noticeably absent from tall grass country immediately around Moshi, although the grasses appear ideal for its purpose. And consider the number of birds for which there are apparently adequate nesting sites and materials in evergreen forest and woodland but which are to be found only in the one and not the other habitat. Moreau (3) gave his opinion that of hardly one-tenth of the birds known to him in Usambara could it be said that the observed limits of distribution were conditioned by this factor. Nor, with the exception of water birds, does the food factor appear to play any large part in determining the distribution. Moreau (3) instances the fruit-eating Olive Pigeon (*Columba arquatrix*) which is common in the Usambara Highlands evergreen forest, but is almost unknown from the Intermediate forest, although that is equally well supplied with fruit. On the other hand, at certain times of the year, there is considerable daily movement by some species from their true habitat, in search of food elsewhere. The forest Hornbill (*Bucanistes cristatus*) and two forest starlings *Onychognathus walieri* and *Stilbopsar kenricki* all visit lowland areas when certain trees, particularly figs, are in fruit. The many insectivorous birds which are confined to certain habitats, although others appear equally well supplied with insect life, further support that opinion. But Moreau (5) has shown that the distribution of the Vulturine Fish-Eagle (*Gypohierax angolensis*) a common West African species—is closely correlated with the occurrence of the Oil Palm, which appears to provide an important part of its food. This is well shown by the small colony of these birds at Sanje, in Ulanga District, where there are some forty-odd oil palms, which I believe is the only large group of this tree in the Kilosa, Morogoro or Ulanga Districts.

Climatic factors, as mentioned above, do appear to have something to do with bird distribution, but vegetation is so closely correlated with climate that it is impossible, at the present stage, to decide which factors are dominant. Humidity, a resultant of rainfall and temperature, is mainly important in deciding the botany of the habitat. Both Chapin and Moreau agree that boundaries of bird communities are sharply defined by the boundaries of different vegetation formations, although Moreau (3) does not believe that this holds good for the changes in "habit"—the different plant association within a formation, particularly within evergreen forest. Of 294 species of land birds from Usambara, Moreau (3) lists only 20 which are encountered both in evergreen forest and outside it. Moreover, in Usambara, where there are regenerating clearings in evergreen forest, no colonisation by forest birds occurs until the small tree stage in the succession is reached, and then usually only by those species which inhabit the edges of evergreen forest. The same forest birds are, however, found in very dissimilar types of forest, whether humid or semi-humid, lowland or highland and in those forests maintain the same stratifications—e.g. ground birds inhabit that stratum in all types of forest, birds of the canopy are always tree-top birds.

The distribution of some of the genus *Cisticola* (Grass Warblers) apparently most markedly follows botanical formations. *Cisticola cheniana* is rarely found outside thorny woodland, or scattered bush and high grassland. *Cisticola juncidis* avoids scattered tree-grassland and shows marked preference for short grass plains, whereas another small *Cisticola*, *C. brachyptera*, appears to need a woodland, or at least a scattered tree-grassland habitat and is not found in the open plains.

There is also a sharp difference between the birds of semi-arid bushland or scattered-tree grassland, and those of the semi-humid long grass woodland, which will be referred to more fully later. It may be remarked here that the apparently austere habitat of semi-arid scattered-tree grassland contains a greater number of bird species than any type of habitat known to me.

Temperature itself may play some part in influencing breeding urges, and therefore influence the range of some birds. But as Moreau (4) has shown, in any given habitat there may be considerable differences in temperature near the ground, in dense grass or in tree tops, in the depths of forest and outside, all different from the standard temperature as measured on a screen. This will be referred to again under eco-climate.

Moreau (3) found very definite altitudinal zoning of birds in the Usambara, most marked above 5,000'. Of 38 forest forms only 11 appear to exist in any number throughout the Lowland, Intermediate and Highland forests.\* The other 77 show very defined range, 16 being confined to the Lowland forest, 21 species occur in the Lowland and Intermediate zones and 29 in the Intermediate and Highland zones only. In Usambara of the 200 spp. of non-forest birds only 16 do not occur in the lowland area, 7 of which are exclusively Highland and 9 confined to the Intermediate and Highland zones. The altitudinal limit is very well marked in some of these birds, particularly the Golden and Malachite Sunbirds (*Drepanoplectes reichenowi* and *Nectarinia famosa*), which never occur below 5,000, an observation which holds good for both on Meru, and in the case of the latter in the Uvidunda Mountains of Kilosa. The discontinuous range of some non-forest birds which occur both above and below the forest is also noted. But while the temperature changes with altitude, the difference between the mean maximum in Usambara for the hot and cold seasons is such that if birds show preferences for certain temperatures there would be well marked seasonal movements up and down the mountains. These do not take place and Moreau considers that it becomes unlikely that a direct reaction of birds to temperature is a general factor in controlling distribution locally.

Light, pressure—a function of altitude—and wind are all factors which may play some part in controlling distribution, and light may be of some importance in relation to forest birds. Moreau (4) states that the light intensity at ground level in evergreen forest is 1/1,000 of that of the open air, and he suggests that birds which inhabit the gloom of the forest floor may be physically incapable of withstanding full sunlight. Outside, the forest biome light probably plays no part in distribution and Moreau considers it unlikely that pressure and wind play much part. Except within

\*In Usambara Moreau recognises Lowland evergreen forest with an upper limit of 2,500'; Intermediate from 2,500'—4,500' and Highland above 4,500'.

the forests most of Tanganyika is swept by strong winds towards the end of the dry season, to which all types of habitat, except the forest depths, are liable. These winds are more marked in open grass plains or scattered tree grasslands, but the botanical factor has already become operative and the differences in bird population are more probably due to botanical differences than to wind.

One other factor should be mentioned before specific bird-plant communities are described. The climate within a patch of tall grass is very different from that on bare rocks nearby, and both differ from the standard climate of the surrounding open air. Those specialised climates, related to their environment, are referred to by Moreau and other workers as eco-climates. Thus all the members of a bird community in semi-arid thorn bush are not actually subjected to the same climate. Moreau (4) instances the case of a lark working the ground by day, which is exposed to a higher air temperature than a Kappoc-tit on a twig 6' above, a difference which on data from temperate regions, is equivalent to the difference involved in more than 5,000' in altitude. Generally the eco-climates within dense herbage or in woodland and near the ground are more extreme than the standard, whereas in forest under a canopy the daily maxima are generally lower than the standard climate. It is only reasonable to suppose that, when such eco-climatic differences can occur in adjacent habitats, eco-climate must play some part in a bird's choice of habitat.

As will be appreciated from the preceding paragraphs, too little is known of the force of each factor in deciding a bird's choice of habitat, so that in the present state of knowledge of bird distribution one is forced to use, almost entirely, the vegetational factor to provide the compartments for our bird associations. Altitude is also of some importance, forming, as it were, first floor and attic rooms in the distribution, and is chiefly noticeable about 4,500'. In using the term "compartments" and "rooms", I do not wish it to be thought that the bird-vegetation associations are sharply demarcated; several species are common to many vegetational formations, and are to be found at widely different altitudes. The terms do, however, give the broad impression of the intentions of this paper, to show briefly the most important birds to be found in the chief vegetational formations of a large part of the Territory.

In order to keep the description of the habitats as simple and easily recognisable as possible, I may have outraged some botanical opinion by broadly lumping habitats of rather different dominant species. It has also led to artificial grouping of some birds from similar types of habitat from north, east and south which would not be found together, although the majority occur in those habitats throughout the greater part of the Territory.

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### Use of the Keys.

I have tried to pick out the features which strike one in the field, such as a bright colour, or noticeable white mark or streaking. Males of several of the birds mentioned have striking breeding plumage and very nondescript off-season plumage, similar to the female. This is particularly so with such birds as the Bishops, and some of the Whydahs. It would be impossible to give an adequate field key for the off-season dress, and I have not attempted it.

Observers should concentrate on the characteristic colour of the bird, and if it is a brown or rather drab bird on any peculiarities in length of bill, legs or tail, and the proportion of white, if any, on the underparts. The sizes of the smaller birds should be related as far as possible to sparrows and thrushes. Larger birds generally have either reasonably distinct colours or other characteristics. These sizes have again been divided generally into distinctly smaller than sparrows, sparrow size and thrush size, and large and very large birds.

For an example, take a bird seen on the seashore with long legs, plain brown upperparts, with white collar at back of neck and white forehead and a short bill, and plain white underparts. Looking at the leg the main divisions 1, 2, 3 and 4 are not applicable: division 5 contains birds with long legs and brown plumage: next look at the capital letters A.B. A is discarded as the bird is small: B fits. Then follow the small letters without suffixed number: a includes birds with short bills; a<sup>1</sup> does not fit but b<sup>1</sup> does. Now follow letters with suffixes 2; a<sup>2</sup> refers to birds with white foreheads. Then follow letters with suffix 3; a<sup>3</sup> refers to birds with no white collar on the neck and does not fit; b<sup>3</sup> covers the observed bird which had no black on the back of the neck, and fits the White-fronted Sand Plover.

No field keys of the sort attempted here can ever be completely satisfactory, but it is hoped that used in conjunction with such a book as Roberts's "Birds of South Africa", they will assist in the identification of a large proportion of the birds seen.

### I. BIRDS OF THE SEASHORE.

Where the coast lies open to the Indian Ocean the receding tide generally leaves great areas of mud and sand-flats which are particularly attractive to the many migrant sandpipers and sandpipers from the Northern hemisphere. African forms of those families also occur. These are

commonly known as waders and have characteristically long legs in relation to their general size. In creeks and inlets muddier conditions generally prevail, a smaller area is uncovered by the tide, and mangroves make their appearance. At high tide, when there is only a narrow strip of dry sand between the water and the first vegetation, very few waders are to be seen on the shore. As the tide rises flocks fly to larger, undisturbed areas of the beach, or inland a short distance to low-lying marshy land. Salt pans are a favourite haunt at high tide.

Members of the sandpiper family feed on a mixed diet including insects, small mollusca and crustacea, fish fry and occasionally vegetable matter, and are commonly seen dabbling and probing the sand with their long bills. Many of these are not restricted to the seashore but are found on lake shores and along large rivers with suitable open beaches. There is a certain amount of differentiation in the area chosen for feeding, some species such as the Little Stint, Sanderling and Ringed Plover keeping very near the water's edge, while the White-fronted and Kittlitz Sand-plovers, the Three-ringed Plover and others seem to prefer the mudflats uncovered by the tide. The larger waders such as the Curlews, Oystercatchers and Whimbrels are more usually seen away from the water's edge, but at very low tides are sometimes found in the water. A species which is a great paddler, as well as being a somewhat uncommon, odd-looking bird, is the Crab-Plover, which may be seen in small flocks opposite the golf course at Dar es Salaam and on the beaches at Mjimwema. This long-legged species happily paddles in fairly calm water well over its 'knees'.

At low tide the waders are frequently joined by resting terns, gulls and sometimes by herons and egrets, although most of the last are more particularly birds of riverine, lake and swamp habitats. Kingfishers, particularly the Pied Kingfisher, fish from the posts of fish-traps at high tide, but are more particularly birds of the inlets and estuaries.

Large reefs, exposed at low tide, both inshore and more distant, attract a great variety of birds. This is the favourite hunting ground for most of the waders, which scatter themselves all over the pool-studded surface. Herons and egrets fish in the pools, while the Pied Kingfisher hovers over the larger ones. Terns rest near the water's edge, occasionally springing into the air to give one of their masterly exhibitions of massed, unified flight, with sudden coordinated swings and swoops.

In harbours the most noticeable birds are kites and gulls which spend their time scavenging round ships. I have yet to see the Fishing Owl although it has been recorded from further north.

The mangrove areas are not particularly rich in bird life except for the Mangrove Kingfisher, and sometimes attracting herons, egrets and cormorants. Bee-eaters may sometimes hawk insects from the mangroves, but they are ubiquitous and cannot be considered a typical component of the shore community. Where a few trees occur, and then only near an estuary, the uncommon Osprey may sometimes be found, as well as the resident Fish Eagle.

The following list of birds has been recorded from the Dar es Salaam, Tanga and Malindi beaches. All those from Malindi should occur round Dar es Salaam. Migrants, generally only seen from November to March, are marked M.

### *Fish eating.*

White-breasted Cormorant  
Pink-backed Pelican  
Fish Eagle  
Osprey  
Black-backed Gull  
Hemprich's Gull  
Gull-billed Tern  
White-cheeked Tern  
Lesser Crested Tern  
Crested Tern  
Pied Kingfisher

*Phalacrocorax carbo*  
*Pelecanus rufescens*  
*Cuncuma vocifer*  
*Pandion haliaetus*  
*Larus fuscus*  
*Larus hemprichii*  
*Gelochelidon nilotica*  
*Sterna repressa*  
*Sterna bengalensis*  
*Sterna bergii*  
*Ceryle rudis*

### *Mixed diet.*

Grey Heron  
Goliath Heron  
Great White Heron  
Cattle Egret (Creeks)  
Little Egret  
Green-backed Heron (Creeks)  
Reef Heron  
Mangrove Kingfisher

*Ardea cinerea*  
*Ardea goliath*  
*Casmerodius albus*  
*Bulbulcus ibis*  
*Egretta garzetta*  
*Butorides striatus*  
*Leptorodias shistacea*  
*Halcyon senegaloides*

### *Scavengers*

Kite

*Milvus migrans*

### *Insects, small mollusca, crustacea etc.*

Ringed Plover (M)  
White-fronted Sand Plover  
Kittlitz Sand Plover  
Three-banded Plover  
Mongolian Sand Dotterel (M)  
Great Sand Plover (M)  
Grey Plover (M)  
Turnstone (M)  
Oyster-catcher (M)  
Curlew Sandpiper (M)  
Little Stint (M)  
Sanderling (M)  
Terek's Sandpiper (M)  
Common Sandpiper (M)  
Greenshank (M)  
Curlew (M)  
Whimbrel (M)  
Crab-plover

*Charadrius hiaticula*  
*Charadrius marginatus*  
*Charadrius pecuarius*  
*Charadrius tricollaris*  
*Charadrius mongolus*  
*Charadrius leschnaultii*  
*Charadrius squatarola*  
*Arenaria interpres*  
*Haematopus ostralegus*  
*Calidris testacea*  
*Calidris minuta*  
*Crocethia alba*  
*Terekia cinerea*  
*Actitis hypoleucos*  
*Tringa nebularia*  
*Numenia arquata*  
*Numenia phaeopus*  
*Dromas ardeola*

Of the migrants listed a small number of a few species generally remain through the northern summer. These are particularly the Ringed Plover, Common Sandpiper (van Someren has recorded a nest of this species), Curlew and Whimbrel.

Identification of the Pelican, Herons and Egrets, Fish Eagle, Osprey and Kite, Gulls, Crab-plover and Kingfishers should present little difficulty. The Sandpipers and Sand-Plovers are another matter and a satisfactory field key is almost an impossibility. Relative sizes are an important aid in identifying these birds and that is impossible to convey adequately by the words larger and smaller. The following field notes may help a little in deciding the bird's identity.

Hemprich's Gull is the only really common gull of the coast, and all the gulls seen in the harbours are almost certain to be this species. The Black-backed is much more rarely seen, although a small flock used to congregate at low tide on the sandspit at the mouth of the Msimbazi river near Selander Bridge, Dar es Salaam.

The Terns are almost invariably seen in flocks, sometimes in harbours, more generally in the open sea, and at low tide congregated on reefs. Their pale grey plumage, forked tails and long bills are characteristic. The species are not easy to distinguish without considerable familiarity with them. To confuse identification other species not listed may be present on rare occasions. In breeding plumage those known on the East African coast have black forehead, crown and nape with the exception of the Crested Tern, which has a white forehead.

The sand-plovers and sandpipers, Stint, Sanderling and Turnstone are mostly comparatively small birds, and many are seen chiefly in flocks. Long legs in relation to body size and short and long bills in relation to head size are important diagnostic characters. Bill and feet colour is not much aid to identification with one or two exceptions.

The Ringed and Three-ringed Sand-Plovers are most easily known and the yellow bill and orange legs of the first are distinct from the red bill and yellow legs of the second. These two birds are generally seen in ones and twos, as is the very distinctive Turnstone, with its mottled dark and light brown and white upperparts and black-brown bar across the chest. It is a bird which gives the impression of single-minded concentration on the job in hand when seen searching for food on the landward edge of a reef at low tide. Its black bill distinguishes it from the other 'banded' plovers.

The Mongolian Sand Dotterel, Kittlitz and White-fronted Sand-Plover are difficult to identify. They are sometimes seen in small parties, but more frequently in ones and twos. They all have a distinct white forehead, and Kittlitz Sand-Plover is more easily distinguished with its black edge to the white collar on the back of the neck. The Mongolian Sand Dotterel gives the appearance of standing higher on its legs; it does not have the white nuchal collar of the other two.

Of the Sandpiper family perhaps the Sanderling is most readily identified because of its pale plumage and the black at the point of shoulder of

the wing. Sanderlings are generally seen in close flocks standing at the water's edge. Terek's Sandpiper is a rare visitor to Dar es Salaam but its upcurved bill and yellow feet are good diagnostic characters. A very common shorebird in small parties and singly is the Curlew Sandpiper, of rather insignificant appearance, but which can be easily told with a good sight of the bill, which is distinctly downcurved at the tip.

## FIELD KEY

### I. Mainly white plumage

- A. Very large.  
Bill long and with pouch, light yellow; pink back.  
*Pink-backed Pelican*
- B. Large, legs and neck long; bill very long pointed.
  - a All white
    - a(i) Bill yellow, feet black, larger. *Great White Heron*
    - b(i) Bill and feet black; smaller. *Little Egret*
  - b White with buff plumes; bill and feet yellow; smaller. *Cattle Egret*

### II. Dove-grey, or grey and white plumage

- A. Large; long legs and neck.  
Grey back and wings; white face and underparts. *Grey Heron*
- B. Medium to small Gull sized. Bill long and pointed; tail forked; flight swallow-like.
  - a Bill and feet black  
Pale dove grey above, white below.  
In breeding dress with black crown and nape. *Gull-billed Tern*
  - b Bill and feet red.  
Pale grey above, white below nape dusky. *Whitecheeked Tern*
  - c Bill yellow, feet black.  
Pale grey above, white below. White forehead, black nape.
    - a(i) Large. Bill greenish yellow. *Crested Tern*
    - b(i) Smaller. Bill orange yellow. *Lesser Crested Tern*

### III. Chiefly Black and White Plumage

- A. Large birds, eagle or gull like, or with long necks.
  - a Belly, thighs and under tail coverts deep chestnut. Eagle-like. *Fish Eagle*
  - b All underparts white. Head white, wings black, back dark slate. *Black-backed Gull*
  - c Forehead, crown, back and sides of neck and upperparts glossy black; chin, throat and breast white. *White-breasted Cormorant*
- B. Long legged, long necked, medium size.
  - a Black bill.  
All white with black back and main flight feathers. *Crab-plover*
  - b Red or reddish bill.  
Head, neck and wings black; rump and abdomen white; broad white band on chin and throat. *Oyster-catcher*

- C. Pied plumage, large Kingfisher type.  
Black crown, black line through eye.  
black coliar on chest. Long pointed black bill.

*Pied Kingfisher*

#### IV. Blue and White, Kingfisher Type

- Bill all red; blue back and wings; white underparts.

*Mangrove Kingfisher*

#### V. Waders—legs long in proportion to body. Plumage chiefly shades of brown and grey, with white underparts, sometimes striped or with other colours on chest.

- A. Large: Long decurved bill.

- a Very long decurved bill; upper plumage streaked black on brown; underparts white strongly streaked with brown.  
b Decurved bill shorter; smaller bird; upperparts spotted white on brown; underparts white closely streaked with brown.

*Curlew*

*Whimbrel*

- B. Medium or small.

- a Bill short.

- a(i) Black ring or rings on breast

- a(ii) One broad black ring; bill yellow at base; white forehead and patch at back of neck.

*Ringed Sand-Plover*

- b(ii) Black brown bar on chest; bill black; legs orange, rather short; brownish black patch on either side of chest; upperparts mottled and streaked with darker and some white; white rump; rest of underparts white.

*Turnstone*

- c(ii) Two black rings on chest enclosing one white ring; bill red at base. White forehead, no black patch on forehead.

*Three-ringed Plover*

- b(i) No black ring on breast

- a(ii) White forehead

- a(iii) Larger; no white band on back of neck; white stripe above eye; some pale brown at sides of chest.

*Mongolian Sand Plover*  
*Great Sand-Plover*

N.B. These two birds are very alike, the second being somewhat larger.

- b(iii) Smaller. White band on back of neck.

- a(iv) Distinct black line from behind eye round back of neck, edging lower side of white band. Pale buff underparts.

*Kittlitz Sand-Plover*

- b(iv) No black line edging white neck collar. White underparts.

*White-fronted Sand-Plover*

- b(ii) No white forehead. Mottled plum. Upperparts ashy brown mottled with white; below white mottled with grey on chest and foreneck. Some black in wing; legs slate grey.

*Grey Plover*

In October and March some black often on chest—partial breeding plumage.

In October and March some black often on chest—partial breeding plumage.

- b Bills long or rather long
- a(i) Bill straight
- a(ii) Plumage distinctly pale, ashy grey and white; pale ashy grey above; black in wing; white forehead and underparts. *Sanderling*
- b(ii) Mottled and streaked brown plumage above; chiefly white below
- a(iii) Rather large  
Legs long, greyish green; centre of back, rump and tail white, conspicuous in flight. *Greenshank*
- b(iii) Small or rather small
- a(iv) Almost plain brown above, some brown wash on sides of chest. *Common Sandpiper*
- b(iv) Streaked ashy brown above; white below. *Little Stint*
- This is the smallest of the waders.
- b(i) Bill distinctly upcurved or decurved; rather small birds.
- a(ii) Bill upcurved; feet bright yellow. *Terek Sandpiper*
- b(ii) Bill decurved at tip; bill and feet black. *Curlew Sandpiper*

## VI. Plumage all Dark Brown

- Large, hawk-like; tail with distinct fork. *Kite*

## VII. Brown above, mainly White below

- A. Large, Eagle-like;  
White crown, sides of face and all underparts; black in main flight feathers. *Osprey*
- B. Gull-like  
Brown head, back, foreneck and sides of body. *Hemprich's Gull*

## VIII. Slate-Grey above, Heron-like; long neck, legs and bill

- A. Large.  
Slate-grey above, maroon below, with black line down throat; bill and feet black. *Goliath Heron*
- B. Smaller.  
Dark slate-grey above and below; chin, throat and cheeks white; bill yellow, lower legs orange. *Reef Heron*

## IX. Dark Green above

- Slate-grey below; chin white. *Green-backed Heron*

(To be continued in No. 36)

## A BRIEF REVIEW OF ARCHAEOLOGICAL REMAINS IN TANGANYIKA

By H. A. Fosbrooke.

Tanganyika is rich in archaeological remains and those already found in the small portion of the Territory which has been subjected to extensive archaeological investigation indicate that many more sites of great scientific value still await discovery. There is unfortunately as yet no comprehensive volume to which the enquirer can be referred comparable with publications dealing with adjacent territories, such as Dr. Leakey's "Stone Age Cultures of Kenya," Dr. Clark's "Stone Age Cultures of Northern Rhodesia," or Rev. Neville Jones' "Prehistory of Southern Rhodesia." This paper will therefore attempt to summarize very briefly the present state of our knowledge of the known relics of Tanganyika's past.

For the purpose of these notes man's past can be broadly divided into three periods, the prehistoric, the protohistoric and the historic. By the first, the prehistoric, we mean that period concerning which there are no written or oral records available, by the protohistoric that period of which oral or traditional record is available, but nothing in writing, and by historic that period covered by the written record. It will of course be obvious from what follows that these broad divisions must to some extent overlap. At one and the same time there are written records available concerning events on the coast known to the Portuguese in the 16th and 17th centuries, traditions preserved during this period amongst some up-country tribes who have enjoyed some stability of culture for a considerable period, and nothing but the stone implements of other folk now lost who were co-existing at the same time with a culture still at the stone age level.

Prehistoric man has left evidence of his presence in three forms; his stone implements, his paintings and engravings on rock and his own skeletal remains. Tanganyika is fortunate in being able to provide at Olduvai a classic series of implements, showing the development of the tools used by Early Stone Age man from a locally chipped pebble to a well-formed hand axe. (1)

The Early Stone Age was the time before man had yet discovered how to produce a cutting edge from flints, obsidian or other such hard materials. It is a sobering thought, and one which may help to get today's problems into perspective, that this period of evolution occupied so many millenia that the Serengeti Plains were flooded to form a lake, desiccated into steppeland with typical steppe fauna, were reflooded, and again dried out. This was before that area had assumed the topography familiar today caused by rifting and tectonic activity. (2)

The Middle Stone Age in Africa was that period of man's development during which his implements were of a smaller type, formed by a different technique and of different material. There were blades with sharp cutting edges, points and scrapers formed of such materials as were available, flint in Europe, hard stone such as agate, quartzite and quartz in East Africa generally, and, in the volcanic areas, that striking material, obsidian, which presents the appearance of black glass. Many such artifacts are found in

the upper strata at Olduvai, in the neighbouring rock shelter of Apis (Nasera) Rock and in the form of surface finds throughout Northern Tanganyika. (3)

The Late Stone Age is characterized not only by the implements of the Middle Stone Age described above, but also by stone bowls, occasional polished axes, a certain amount of crude pottery and beads made of chips of ostrich shell and other such material drilled through the middle. It is probable that certain tribes of Tanganyika were living at a Late Stone Age cultural level till very recently, in particular the Hadzapi or Tindiga recently described in *Tanganyika Notes and Records*. (4)

The second form in which early man left his mark was that of rock paintings and engravings, and Tanganyika is particularly rich in the former. The Kondoa district is the main centre where over 100 painted sites are known. Every new visit by trained observers produces many more finds and it is obvious that this store of prehistoric art is only now beginning to be tapped. (5)

As distinct from the early art of Europe where pre-historic paintings usually occurred in caves, those of Tanganyika are found on the surface of rock shelters. These may be formed by the underside of boulders or groups of boulders in the form of kopjes or by slabs of rock protruding at an angle from the ground, or again by undercutting at the base of cliffs or escarpments. According to the degree of overhang, so varies the degree of protection from the elements. This means that no sealed caves comparable to those in Europe have been found to enable the paintings to be dated with any certainty, but when the world-famed expert M. l'Abbé Breuil visited Tanganyika on the occasion of the Pan-African Congress on Pre-history in 1948, he pronounced the earliest paintings comparable in age with the oldest in Europe and South Africa.

The style of these paintings varies from naturalistic reproductions of game animals to fantastic reproductions of the human form. The main characteristics of these latter are the elongated nature of the body, the head-dresses, masks or hair styles which frequently obscure the shape of the head, and the arm and leg ornaments such as can be observed in, for instance, some dancing scenes. Crudely drawn animals are sometimes mistaken by the uninitiated for representations of extinct species, but expert examination has invariably revealed these to be examples of the degraded art forms practised by the immediate predecessors of the present-day inhabitants during, probably, the last two or three centuries.

Another manifestation of this so-called "modern white" technique is found in the form of geometric design—circles, squares with dots, crosses, and a multiplicity of other formalized designs. No adequate explanation has yet been put forward of the meaning of these; nor are the artists known with any certainty, but as a working hypothesis it can be assumed that the early styles of naturalistic animals and formalized design were the work of Stone Age artists, whilst the "modern whites" are those of the immigrant Bantu of recent centuries. It is hoped that the excavations which commenced in the 1951 season in some of the Kondoa shelters and which will proceed year by year will finally present us with a solution to this problem.

One of the highest manifestations of prehistoric art in South Africa is to be found in the form of engravings in rock, but of these very few examples are known in Tanganyika. Some instances of crudely hammered out animal forms of infantile conception are known but only one example of anything moderately ancient has come to light, in the form of animal figures very reminiscent of the rock engravings of the Sahara and the Upper Nile area.

The third form in which man leaves traces of his past is that of his skeletal remains. So far few of these have come to light in Tanganyika, but those which have, have achieved considerable publicity in scientific circles. For many years controversy raged around the fossil cranium of a man found by Professor Reck in the Olduvai Gorge in 1913. It was at first thought that here we might have a representative of the people responsible for the hand axe culture so richly represented at this site, but subsequent examination of the position by numerous experts has led to the conclusion that Olduvai man is of Middle and not Early Stone Age origin. (1) (3).

There is every reason to believe that Olduvai man was of the same species as that which inhabits the world today, i.e. *homo sapiens*, but his neighbour, Eyassi man, who was found by Dr. Kohl Larsen at the north end of Lake Eyassi in 1936, belongs to a separate species, *Paleanthropus njarasensis*. (6) (7). Again discovery of these remains was accompanied by fantastic claims concerning their age, but the latest position is perhaps best summarized by Wells, (1950) in the following quotation:—(8).

"Weidenreich (1943) has suggested that the fragmentary skull from Lake Eyassi in Tanganyika, formerly regarded as very primitive in character and compared with the Peking and Java fossil men, is in reality intimately related to the Broken Hill skull. Such a relationship appears highly probable; it is indeed possible that the Broken Hill and Eyassi skulls belong essentially to the same type, but the Eyassi remains are too imperfect for the exact degree of relationship to be established. It is noteworthy that Leakey (1946) considers the Eyassi skull to be associated with a Levalloisian culture roughly equivalent to the early stages of the Middle Stone Age in Northern Rhodesia."

Thus of the Old Stone Age no representative has as yet come to light in Tanganyika. Of Middle Stone Age man we have two examples, one of human and one of allied species. Of Late Stone Age man skeletons have been found in the grave cairns of Ngorongoro, but these still await description in scientific literature. Numerous other burial cairns do occur throughout Northern Tanganyika but from only one of these has the skeleton been scientifically examined (9) (10) and here there were no artifacts to enable an association to be made between this man and his culture.

So much, then, for the prehistoric remains, mostly many thousands of years old, of which naturally enough no tradition is extant. In the protohistoric sphere dealt with hereunder, some of the traditions are clear and credible, others mere vestiges from the dawn of tribal history which cannot be accepted without corroborative evidence. In the last few centuries many races and tribes have moved across the East African stage, leaving only the vaguest of traces of their passage. Some of these are in

the form of tribal remnants still existing amongst the better-known tribes of Tanganyika. Other traces of these early peoples are to be found in the form of house sites, earth works and other such remains.

Whilst Tanganyika can offer nothing comparable with Zimbabwe or Khambi, there exists at Engaruka at the base of the Rift wall between Lakes Natron and Manyara the remains of a large town, which Dr. Leakey estimated must have contained a population of between 30 and 40 thousand (11). The remains to be seen today consist of the crumbling stone walls of circular huts, cairns thought to be burial cairns hut having so far yielded no skeletal remains, and stone terraces and water courses. Some of these protohistoric inhabitants must have been well versed in the improvement and conservation of water supplies. In central Masailand there is a series of wells driven through crystalline limestone to a depth of up to 60 ft. Those illustrated in a recent number of *Tanganyika Notes and Records* (12) have lost all resemblance to their original form, having been converted into wide-mouthed apertures in the form of inverted truncated cones by the unskilled excavations of Chaga tribesmen employed by the Masai to "improve" these sources of water. But at Naberera, Makami and Ndedo subsequent excavation has been less radical, so the original form of the wells can be seen. The shaft is consistently narrow—only about 2' 6" in diameter—and some have argued from this that the makers of these wells must either have been very small people or have possessed some particular technique of well sinking. But this theory cannot be substantiated as the air shafts of the underground bolt holes referred to later are of even smaller diameter and yet we have evidence that they were dug by the tribes at present in the area who are neither small nor particularly skilled excavators.

Throughout and beyond Masailand there are to be found numerous earth-works in the form of dams. About three miles to the west of Ngorongoro camp there is a series of three dams in a drainage line coming from Oldani mountain. The conservers of this water must have found that the lowest dam frequently failed to fill, possibly as the country desiccated in the course of one of the recent climatic fluctuations known to have occurred in East Africa. In consequence they cut a diversion ditch from a neighbouring water course to fill the bottom dam. The road from Ngorongoro camp to the Serengeti now passes over the middle dam and through the diversion cut. In central Masailand and as far south as the area around Kongwa, which was cleared of bush for the Groundnut Scheme, depressions are to be found, which present every appearance of being artificially created to conserve surface water, but no excavations have been carried out, nor have any of the tools or weapons of the people concerned been found to suggest who they might have been. There is however every reason to believe that they were a pastoral people practising a system of transhumance, i.e. using the grazing and rain water on the plains during the rainy season and falling back on permanent water supplies in rivers and the wells referred to above in the dry season. So here again is evidence of moderately recent climatic change, for no one could have herded cattle in the thick deciduous thicket which was cleared in the course of the Groundnut Scheme: it must have been much more open grassland when these rain ponds were excavated.

Another type of protohistoric remains more accessible to the visitor is to be found in the Moshi and Pare districts (13) & (14). These consist of

elaborate underground earthworks in the form of passages and chambers wherein were hidden cattle and womenfolk in the time of tribal warfare. Contrary to popular belief it was not so much the pastoral Masai who were the cause of these elaborate anti-raid precautions as the neighbouring Bantu tribes, who seem to have spent much of their time and energy in raiding neighbours. A good example of such remains is to be seen within a few hundreds yards of the two hotels at Marangu, Moshi district. In this neighbourhood also can be seen some interesting examples of the engraved rocks which are associated with the initiation ceremonies which the present inhabitants of the area, the Chaga, practised up to the beginning of this century. (15).

Another type of protohistoric remains, namely, the stone-walled fort, is also exemplified in this area. These works were of dry-stone masonry. The art of creating lime mortar does not seem to have penetrated inland, though it had been practised on the coast for many centuries. Such forts seem to have been a later development in the practice of tribal warfare, and their form is doubtless due to Arab influence spread with the slave trade through much of Tanganyika. The Northern area was, however, fortunate in suffering a minimum of hardship from this scourge.

Further stonework in the form of terraces is to be found in the Hehe area. (16).

Finally, one particular type of rock painting which is termed the "modern white" is thought to be only two or three centuries old and to have been the work of the tribes who were the immediate predecessors of the present inhabitants of the area concerned. (5) & (17). This phase of prehistoric art is largely symbolic and where the representation of animals is attempted is crude in the extreme.

As explained above, the creation of many of these protohistoric remains must have been contemporary with or subsequent to events concerning which written records exist, so bringing them into the historic category. Readers of *Tanganyika Notes and Records* are particularly fortunate in having so indefatigable a contributor as Sir John Gray, whose articles (18-23) shed such light on the history of the East African Coast. Many more tangible remains of this history exist than of the tribal ebb and flow of the hinterland. The abandoned city of Gedi and the massive pile of Fort Jesus at Mombasa, both in Kenya, are rivalled by the equally impressive but less publicized remains in Tanganyika. Numerous examples of these latter have however been described in *Tanganyika Notes and Records* (14-28), and more recently in a well-illustrated article in the *East African Annual* (29). In a relatively undeveloped country such as Tanganyika, many relics of prehistoric, protohistoric and historic times still doubtless await discovery, whilst those that are known cannot be protected with the meticulous care which is devoted to similar remains in richer and more advanced countries. So the assistance of the public is all the more necessary in preserving our heritage from the past.

Such assistance can be given in two ways, firstly by reporting any such discoveries to the Secretariat or the nearest District Office. When possible such reports will be investigated by an expert, and if the site is deemed

worthy it will be "gazetted" and so given protection under the Monuments Preservation Ordinance, 1937. Thereafter excavation, tampering with, or removing parts of such relics is forbidden except under licence. But by the very nature of this process there is bound to be a hiatus between the discovery of a valuable site and its protection.

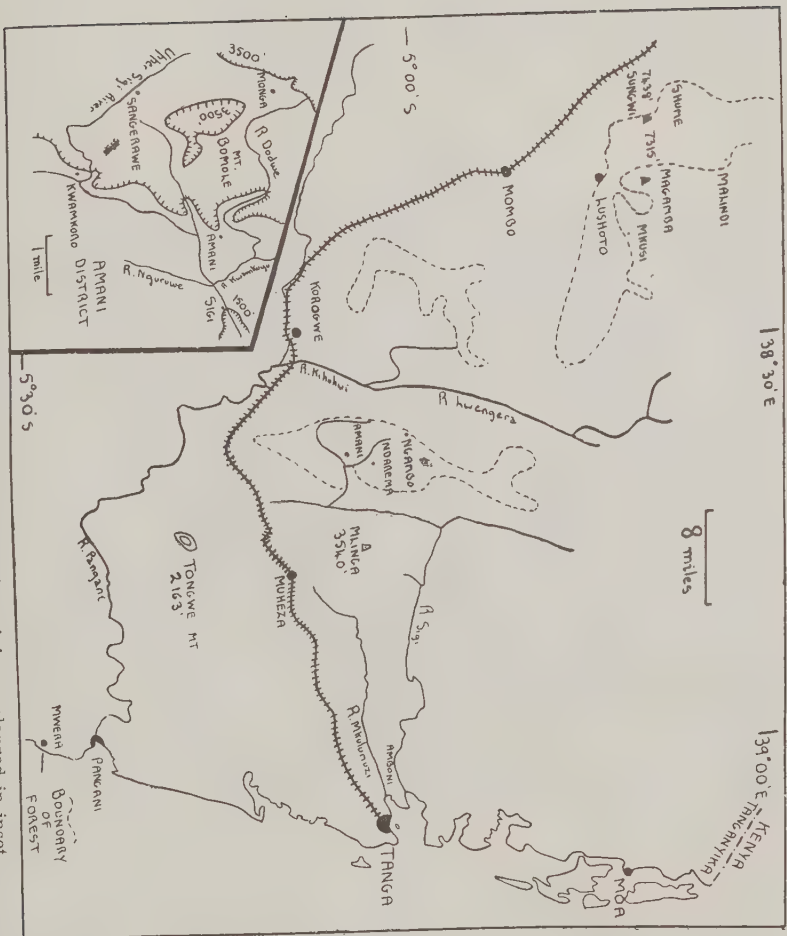
So the second way in which the public can assist is by exercising restraint: by refraining from chipping or drawing round newly discovered rock paintings, from digging up and removing bones or stone implements from freshly revealed sites or from removing—a heinous but common crime—built-in bowls from ruined mosques and tombs. The satisfaction of having discovered, and preserved for posterity, some valuable relic is much greater than that to be gained from the surreptitious removal of souvenirs.

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## MOLLUSCA OF N.E. TANGANYIKA



Sketch Map of N.E. Tanganyika Territory with Amani Area enlarged in inset.



# OBSERVATIONS ON THE ECOLOGY OF THE LAND AND FRESHWATER MOLLUSCA OF NORTH-EAST TANGANYIKA

By **Bernard Verdcourt.**

(EAST AFRICAN AGRICULTURE AND FORESTRY RESEARCH ORGANIZATION)

## 1. Introduction

The collections on which these observations are largely based were made by the writer during 1949-50 whilst residing at Amani. Apart from material collected by Dr. Pfeiffer in 1937 and Mr. Loveridge in 1928 little would appear to have been collected since Alfred Craven (1880), and Leopold Conradt (1891) visited the Usambaras. Mollusca have been collected in other areas in the district by travellers and expeditions, mostly whilst on their way to destinations further inland. Von Martens (1898)<sup>1</sup> lists these records in what is still the only work which deals in a general way with the mollusca of East Africa. The Germans during their stay at the Amani research station at the beginning of the century appear to have paid no attention at all to the snails of the district although many of the other groups were studied. The Sjöstedt expedition collected several species in Tanga, and Korogwe on its way to Kilimanjaro and Meru (D'Ailly 1910).<sup>2</sup> A few more results of the collecting by casual collectors are reported on by F. Haas (1936).<sup>3</sup> It seems worthwhile therefore to put on record these present observations. Unfortunately many years will elapse before the present material is worked out and the new species described. Much of the material was collected in spirit after being drowned outstretched, and detailed anatomical studies are to be made. Very few of the snails and slugs of the district have ever had even a cursory examination made of their anatomy. Precise specific identifications are not however necessary in order to give a general picture of the molluscan ecology of the district. This present paper will, it is hoped, provide a background to the future systematic work arising from the collection and will provide habitat details so often omitted from descriptions of species. The material is being studied by the late Dr. Pfeiffer in conjunction with the Senckenberg Museum, Dr. J. Bequaert of Harvard College, U.S.A., and H. Watson, Esq., of Cambridge, England.

## 2. Physical Features and Vegetation of the Area

The sketch map (Fig. 1) indicates the position of the localities mentioned. The major part of the area is occupied by the Usambara Mountains, an excellent account of the synecology of which has been given by R. E. Moreau (1935).<sup>4</sup> It is therefore only necessary to outline briefly the general features of the region after which the individual habitats studied are described in greater detail. Usambara consists mainly of two por-

tions, the East and the West, separated by the valley through which runs the R. Lwengera. The eastern portion rises in one place to 4,900ft. but the majority of the ridges lie between 3,000 and 4,000ft. The western portion on the other hand contains ridges of well over 7,000ft. in altitude, the dividing valley, a fault trough, being approximately 1,000ft. in altitude. The annual rainfall, approximately 40" at the coast and slightly less further inland, rises to about 80" at Amani. It drops again to 30-40" in the Lwengera valley, but rises steeply to 50/95" on the eastern scarp of the western block. Another drop to below 40" occurs in the centre of the western plateau followed by a rise to 60" at the western edge. This rainfall falls mostly in two periods, the long rains from March until May or June and the short rains from November to December. The rainfall in the remaining months is usually below 4" per month at Amani, the driest months being January and July. In the mountains the demarcation between the periods is not always sharp and during 1950 the period between the two rains was mostly cold and wet with only a very short dry period. The temperature at the coast varies from 17°-35° C (mean 25°) this being the extreme annual range yet recorded. At Amani this range is 9.5°-32.3° (mean 20°) and at Lushoto 2.8° — 30.5° (mean 17°). Ground frosts are recorded for the areas above 5,000ft. and temperatures as low as -3° have been recorded at the N.W. edge of the W. Usambaras. The mean annual humidity at Amani is 84% (though it does drop to 60% outside the forest and to 70% in the forest) and rises to 90%. This corresponds to a mean annual saturation deficit of 2.8 gms/cub. metre, a figure of much more significance from the biological point of view. Heavy dews and mists are of very frequent occurrence. Elsewhere in the area under consideration the climate is equally humid on the eastern edge of the W. Usambaras, but becomes less and less humid in the western edge of the western plateau, the middle of the western plateau, and the coast respectively and is finally least humid in the Lwengera valley.

The geology of the area has been briefly summarised by Milne (1936)<sup>5</sup> The solid geology does not affect the ecology of the Mollusca save where the outcrops are bare. The mountains are chiefly formed of gneiss rocks which vary from basic to acidic in character and the surface deposits are reddish or light brown and technically called loams but to the lay eye they are distinctly clayey in texture. These deposits are predominantly acidic and low in calcium content, two factors of supreme importance in molluscan ecology. Black soils occur in the valley bottoms of the foothills. Nearer the coast the underlying rocks are mainly Jurassic and Cretaceous with over-lying sands and gravels. The soils vary from acidic to calcareous at the surface and are mainly clays and red earths. A flat strip bordering the coast is again different, consisting of red earths on outcrops of coral limestone, sandy red earths on the low ridges, and a widespread complex of pale sands and blackish sandy clays. The top layers in the forested areas are covered with humus (often of very limited thickness) and decaying leafy debris.

The aquatic environments in the area are predominantly lotic. Ponds are infrequent and swampy. Swamps occur in many of the lowlands of the Usambaras and its foothills and also bordering the R. Pangani. The streams and rivers are swift and rush over rocky beds, but become slower rivers in the coastal areas.

The Usambaras were once covered with evergreen forest. Many clearings have been made and subseral communities have developed, where native cultivations have not followed the clearing or have been abandoned. Grasslands liable to firing occur on the western edge of the E. Usambaras and on the western plateau. The foothills and much of the coastal belt were once covered with a drier forest but a great deal of this has been entirely removed and the land is now used for agricultural purposes. Sisal plantations occupy a considerable portion of the flat country. Wooded grassland now occurs in the coastal belt with small forest patches. Further inland bushland and thicket occur. South of the railway much of the country is covered with vegetation which is intermediate between woodland and bushland with islands of open forest.

### 3. Ecology of the Mollusca

In temperate climates mollusca do not form associations of a specific character with one another or with other animals and plants and there is little element of competition. Apparent associations are due to the components having a liking for the same conditions. The distribution of the Mollusca depends more on climate, lime, and history than it does on the presence or absence of certain foods or plants. Soil structure is also of importance, loose mossy debris and a litter of sticks on a porous soil providing the nooks and crannies necessary. British conchologists know very well that it is impossible to be absolutely dogmatic about the habitat which a particular snail favours. Species which appear to be confined to one type of habitat sooner or later turn up in quite a different one although not frequently enough to render generalisations completely valueless. Microgeology and microclimates have a good deal to do with distribution and very often what may macroscopically appear to a human as being a totally different sort of habitat may well be very close indeed to another from the point of view of a small animal. The age of the habitat is certainly of very great importance. Mollusca are very slow indeed to colonise new areas. Subseral plant communities are therefore not suitable habitats unless the destruction of the original vegetation has been carried out in such a way as not to disturb the ground to any extent and the resulting subseral offers conditions approximating to the prisiere.

In Tropical Africa the fact that a large proportion of the molluscan fauna comprises carnivorous forms (chiefly *Streptaxidae*) is an added factor of little importance in temperate countries. Certain species form predator-host relationships and competition results. On the whole however it seems that the conditions of importance in the habitat are much the same as in England. Within the area under consideration no species has become anthropophile to the extent of, say, *Limax flavus* L., but the large Urocyclid slugs common at Amani have become adapted to living in waste places, gardens and clearings. *Achatinae* are also to be found in plantations but are not a pest such as they are in other countries where they have been introduced. With the exception of *Edentulina affinis* Bttr., a large rapacious snail which preys on *Urocyclidae* and *Achatinae* and is obviously following their increasing adaptation to man made habitats, none of the other forest snails has been found living in plantations and gardens and they are absent from those parts of the forest which have been thoroughly

disturbed. When the disturbance to the ground layer has not been uniformly extensive many species survive under debris, as is the case in parts of the conifer plantations on Mt. Bomole. Wide areas of the forest have no mollusc population left however.

As in temperate regions few species eat green leaves but chiefly subsist on decaying matter in the ground debris. This also applies to the *Achatinae* and slugs which however are not averse to green food. *Ledoulxia* has been observed feeding on faeces of other invertebrates on leaves and many of the snails undoubtedly act as scavengers in this manner. Wood has been found in the intestine contents of *Veronicella* and *Thapsia* which often live under logs but this is ingested presumably along with minute plants growing on it. The *Streptaxidae* are entirely carnivorous so far as is known. From observations made on the stomach contents it would seem that they live on other mollusca entirely. Such remains are difficult to distinguish unless a radula happens to be present in the contents. The few cases of actual feeding observed in the field seem to indicate that some of the predators have preferences. *Edentulina affinis* has only been observed feeding on large Urocyclid slugs of one or two species, whereas the smaller *E. oleacea* Fulton seems to favour juvenile *Achatinae*. *E. affinis* is however known to be an enemy of *Achatinae* and has been introduced into areas to combat them. The observed preference is therefore perhaps illusory or local. The smaller *Gulellae* have been observed to attack other snails in captivity, but since some have been found to be remarkably common in soil full of the weathered pellets of *Hyrax* dung it is possible that they may eat such material.

Birds and reptiles are enemies of Mollusca but only certain species (e.g. the Monitor *Varanus niloticus* (L.) and the Dove *Aplopelia*) show any marked preference for them. The 'Siafu' ants will destroy almost any living thing which they encounter. On one occasion a small brown larval Mantis was observed in the act of feeding on a small slug but how often this remarkable feat takes place is not known. No references to Mantis eating such things have been discovered anywhere. Some of the rapacious snails in the area have very brightly coloured bodies but whether this is a warning coloration cannot be decided without further observations, for instance *Gulella Usambarica* (Cn.) and some of the minute *Gulellae* have bright scarlet tentacles. *Gonaxis craveni* (Sm.) has a pink body and *G. vosseleri* Thiele has vermilion tentacles and a broad vermilion stripe on the back of its otherwise grey body. *Edentulina obesa* (Taylor) and *E. oleacea* Fulton have bright green bodies.

The snail fauna of Tropical Africa is characterised by the preponderance of rapacious types (*Streptaxidae*) and the presence of the distinctive *Achatinidae* and the *Urocyclidae*. The area under review falls within the "East African Region" (as defined by H. Pilsbry) and this is characterised by the occurrence of true *Helicidae*, regular helicoid *Streptaxidae* and certain genera of the operculate *Pomatiasidae*. Throughout Tropical Africa there is a marked poverty of mollusca compared with other tropical countries. Living molluscs are not much in evidence in the forests. This has been attributed to the fact that they are largely nocturnal but the writer has found *Gonaxis*, *Edentulina*, *Achatina*, *Veronicella*, and many of the other genera of snails and slugs to be quite as active during the day as they are at night.

It is possible to generalise to a certain extent about the distribution of the snails and slugs of the area under review and the following account is based on both the writer's collecting and the published records, together with some material sent for examination. It is not possible to rigidly define regions within the area which are characterised by definite mollusca but three areas, (a) 0-2,500ft., (b) 2,500ft.—4,000ft. and (c) 5,000ft.—7,000ft. are fairly natural. They roughly correspond with dry lowland evergreen forest, intermediate evergreen rain forest, and dry upland evergreen forest.

### Freshwater and Brackish water species.—

The mangrove swamps are dominated by *Potamides decollatus* (Brug), and D'Ailly<sup>2</sup> records *Lanistes purpureus* Jonas as being common. In Britain members of the *Assimineidae*, *Hydrobiidae*, and *Ellobiidae* occur in brackish water habitats, and throughout the world there are mollusca which have become adapted to these places. In the tropics *Cerithiidae* and *Melaniidae* are the main forms involved and a single species usually predominates, often occurring in vast numbers. Where the mangrove formations are narrow such as at Mombasa they are chiefly inhabited by littoral and shallow-water marine species, such as *Nerita ornata* Sow, and *Nassa coronata* Bgt.

The freshwater species are most abundant in the coastal plain and the following genera occur in the area, *Pila* and *Lanistes* (*Pilidae*), *Cleopatra*, *Thiara* and *Melanoides* (*Thiaridae*), *Viviparus* (*Viviparidae*), *Bulinus* (*Bulinidae*), *Physopsis* and *Bulinus* (*Bulinidae*), *Planorbis* (*Planorbidae*), *Melampus* (*Ellobiidae*), *Neritina* (*Neritinae*) and two species of *Spatha* (*Pelecypoda*). A similar fauna is found at low levels inland also, with *Succineidae* and *Ancylidae* added. *Cleopatra* spp. seem to dominate everywhere. In the mountains however the fauna rapidly decreases and in the E. Usambaras only two species occur in the streams. *Lanistes farleri* Craven is found at 1,500ft. in the R. Sigi and above that level the streams are entirely dominated by a single species of *Cleopatra* which is very abundant. The stagnant waters yield *Physopsis*, *Lymnaea*, and a species of *Ferrisia* (*Ancylidae*) similar to one occurring in Portuguese East Africa. On the W. Usambara plateau *Lymnaea* and *Gyraulus* (*Planorbidae*) are common in the valley-bottom ponds, and *Isidora* occurs. A single species of *Pisidium*, a predominantly temperate genus of bivalve has been found in a swamp in the middle of the western plateau.

### Terrestrial Mollusca.

The lowland area is characterised by the complete absence of true *Helicidae*. The operculates are well developed, small species of *Tropidophora* being common everywhere (*T. letourneuxii* Bgt.), whilst large highly sculptured species (*T. calcarea* Sow) are common in the forests of the Pangani area. The *Streptaxidae* are well represented and include *Edentulina affinis*, *E. obesa*, *Gonaxis ordinarius* Sm., *Marconia gibbosa* Bgt. *Gulella usambarica*, and the abundant regular helicoid *Tayloria usambarica* (Cvn). Several species namely *Gonaxis craveni* (Sm.), *Gulella grossa* Mts, and *G. foliifera* Mts are recorded from the area but they are not common and the writer has not seen them. All three are very characteristic of the Amani area. *Stenogyridae* abound and include several species such as

*Opeas magilensis* Craven which also occur in the intermediate forest. *Pseudoglessula leroyi* Bgt. occurs in all three regions. The *Achatinae* are abundant and are large thick-shelled species. Eight species of *Enidae* are recorded from the area chiefly *Rachis* sp. *Succineidae* are recorded and numerous *Helicarionidae* including *Ledoulxia* spp., *Trochozonites leroyi* Bgt., and *Thapsia* spp. *Ledoulxia* is recorded from the intermediate forest but must be rare; both the *Thapsia* and the *Trochozonites* are however common. A *Helicarion* is recorded from Mombasa. The *Urocyclidae* are represented by few individuals and where found are restricted to places where much of the original forest remains. Two species of *Veronicella* have been collected in the area.

The intermediate area is particularly rich in small species of *Gulella*, thirteen having been found. One of these *G. usambarica* is common to all three regions and one other is common to the W. Usambaras. Three species of the section *Primigulella* occur, one *G. grossa* being common and characteristic. *Edentulina affinis* is the most abundant snail in the region and *E. oleacea* seems to replace the *E. obesa* of the lowland region. *Gonaxis craveni* is a large and characteristic species, and two other species of the genus occur. Both *G. ordinarius* and the variety *obliquior* Haas occur, the latter being confined to the higher ridges. Regular *Streptaxidae* are rare. Operculates are not common. *Cyclophorus elatior* Mts occurs in the forest but no species of *Tropidophora* occur except very sparingly on the grasslands at the western edge of the E. Usambaras. This fact seems to distinguish the regions quite clearly. A species of *Helicidae* is recorded but none was found by the writer. *Stenogyridae* are common and include three species of *Curvella*, several of *Pseudoglessula* and numerous *Subulinae*. A terrestrial species of *Succinea* has been discovered. Few *Enidae* appear to occur and some of those which are recorded may be referable to sections of the genus *Pseudoglessula* since much confusion has occurred. *Achatinidae* are common but have smaller and thinner shells than those occurring in the lowland region. This intermediate area is particularly characterised by the abundance of *Urocyclidae*, a fact which is clearly related to the humid climate. Eleven species have been discovered, only one of which occurs on the grasslands, where it is quite rare. A single species of *Veronicella* has been discovered in the forest near Amani. One species of *Trachycystis* (*Endodontidae*) occurs.

The upland area is rather more distinct from the other two. True *Helicidae* are abundant on the higher mountains to the West. *Tropidophora* again makes an appearance and becomes exceedingly abundant in the same forests as the *Helicidae* favour. The species are small and identical with the small coastal forms. *Cyclophorus* occurs and one *C. volkensis* Mts. is common to Mt. Kilimanjaro. *Streptaxidae* are again well represented. *Edentulina affinis* is rare and no other species seems to occur. *Gonaxis ordinarius* var. *obliquior* occurs. Seven species of small *Gulellae* occur one of which belongs to the section *Plicigulella* and is similar to a species occurring on Mt. Kilimanjaro. Two species of the section *Primigulella* occur in addition to the seven and they are quite distinct from those occurring on the eastern plateau. A species of regular helioid streptaxid occurs sparingly and is distinct from both the coastal species and the intermediate area species. *Stenogyridae* occur but *Achatinae* appear to be almost entirely absent, only a few very old *Endodontidae*

occur, a species of *Punctum* having been discovered in a swamp in the centre of the plateau. A single specimen of a young *Ledoulxia* was associated with it. Amongst the *Helicarionidae* *Thapsia* occurs, but only the one *Ledoulxia* and no *Trochozonites* was discovered. Very old shells referable to *Enidae* occur on the high ridges. *Urocyclidae* are small and uncommon, one or two species occurring in swamps and forests in the middle of the plateau.

The differences between the three regions may be summarised.—*Lowland*: *Helicidae* absent, *Urocyclidae* rare, and *Pomatiasidae* common. *Intermediate*: *Urocyclidae* abundant and *Pomatiasidae* rare. *Upland*: *Helicidae* frequent, *Achatinidae* absent and *Pomatiasidae* common.

#### 4. Descriptions of the Habitats investigated

##### A. Mangrove formation north of Tanga Bay.

A formation occurring on sandy salty tidal mud and very poor in quality in this locality due to extensive cutting and coppicing. The vegetation consists of *Rhizophora mucronata* Lam., *Ceriops tagal* (Perr.) C.B. Rob., *Brugiera gymnorrhiza* (L.) Lam., *Heritiera littoralis* Dryand in Ait., *Lumnitzera racemosa* Willdn., *Xylocarpus benadirensis* Mattei, and *Avicennia marina* (Forsk.) Vierh. (on the outer edges) together with the succulent *Suaeda monoica* Forsk. and *Arthrocnemum indicum* Moquin. *Potamidex decollatus* (Brug.) dominated the habitat and covered the lower branches of the Mangroves. *Littorina scabra* (L) was the only other species found.

##### B. Limestone outcrop near the Amboni Caves.

A craggy limestone outcrop bordering the valley of the R. Mkulumusi, 200ft. or less in height and covered with remnants of forest. Reference to the soil analysis records at Amani show that soil samples from Amboni had a pH of 7-8 and an exchangeable calcium content of 8 milliequivalents of Cao per 100gm. of soil. The forest on the top of the outcrop was composed of *Cynometra webberi* Bak.f., *Manilkara sulcata* (Engl.) Dubard, *Albizia*, *Pandanus*, *Millettia usaramensis* Taub., and *Encephalartos hildebrandtii* A. Br. and Bouché, together with *Justicia pseudorungia* Lindau, *Whitfieldia stuhlmani* (Liddau) C. B. Clarke, *Coccinia* sp., *Gerrardanthus grandiflorus* Gilg. ex Cogn., *Drimiopsis bussei* Dammer, *Dorstenia zanzibarica* Oliv. and *Crossandra pungens* Lindau. The gorge itself at the bottom of the outcrop is characterised by *Pterygota* sp., *Phialodiscus unijugatus* (Bak.) Radlk., *Erythrina saculeuxii* Hua and *Sterculia* sp. The following mollusca were found there *Ledoulxia mossambicensis* (Pfr.), *Opeas magilensis* Cvn., *Edentulina affinis* Bttr., *Achatina* sp., *Pseudoglossula* sp. and *Tropidophora* sp. The latter was common and seemed to like crevices in dead tree boles.

##### C. Thicket Forest, Msubugwe near Pangani.

A coastal forest patch on sandy soil with *Pterocarpus*, *Brachystegia*, *Pleurostylia*, *Sclerocarya caffra* Sond., *Bombax rhodognaphalon* K.Schum., *Croton pseudopulchellus* Pax, *Haplocoelum trigonocarpum*

Radlk., *Ehretia bakeri* Britt *Grandidiera boivini* Jaub., and *Grewia plagio-phylla* K.Schum. Outside this forest patch the vegetation is characteristic of the coast belt, e.g. coarse grassland with scattered *Adansonia digitata* L. and *Acacia zanzibarica* (S. Moore) Taub. The only mollusca found here were shells of a large *Achatina*, (*A. fulica hamilei* Petit) *Tropidophora calcarea*, *T. letourneuxii* and *Ledoulxria mossambicensis*. *Veronicellidae* occur in the open dry places.

## D. Tongwe Mountain.

Early accounts by travellers indicate that the land between the mountain and the coast was once covered with forest and even at the present day a certain amount of forest remains. Coarse grassland with scattered trees surrounds the base of the mountain consisting of the grasses *Roetboellia exaltata* L.f., *Andropogon*, *Hackelochloa*, *Bothriochloa*, *Panicum maximum* L. and *Sporobolus indicus* R.Br., together with the herbs *Pentstemon*, *Calotropis busseana* K.Schum., *Gladiolus quartinianus* A.Rich., *Agathisanthemum bojeri* Klotzsch, *Bonatea kayseri* Rolfe, and *Nervillea* sp. together with scattered trees and shrubs of *Annona chrysophylla* Boj., *Bauhinia tomentosa* L *Strychnos innocua* Del., *Psorospermum febrifugum* Spach., *Combretum apiculatum* Sond., *Kigelia aethiopica* Decne., *Lannea stuhlmannii* (Engl.)Engl., *Ormocarpum kirkii* S. Moore, and *Dichrostachys glomerata* (Forsk.) Chiov. Lower down there are bare rock domes with such species and genera as *Cyanotis longifolia* Benth., *Selaginella vogelii* Spring., *Anthericum*, and *Eriosema*. The mountain slopes have a rather scrubby forest covering at the base consisting mainly of *Grewia forbesii* Harv.ex Mast., *Albizia*, *Dombeya*, *Chlorophora excelsa* (Welw.) Benth. and Hk.f., *Markhamia obtusifolia* (Baker) Sprague, *Oxyanthus*, *Coffea zanguebarica* Lour., with forest grasses *Olyra latifolia* L., and *Panicum pleianthum* Peter. The forest covering is more continuous dry evergreen forest on the upper slopes with *Celtis*, *Commiphora*, *Milletia usaramensis* Taub., *Bosqueia proberos* Baill., *Conopharyngia holstii* Stapf, *Gyrocarpus*, *Teclea*, *Erythrina saculeuxii* Hua, *Chrysophyllum zimmermannii* Engl., *Pandanus*, *Strychnos scheffleri* Gilg., *Chlorophora*, *Dichapetalum ruhlandii* Engl., *Encephalartos hildebrandtii* A. Br. and Bouché, *Rytigynia*, *Allophylus*, *Tricalysia*, *Hugonia*, *Erythroxylum emarginatum* Schum. et Thonn, *Schlechterina mitostemmatoideis* Harms, with *Polypodium* spp., *Sansevieria*, and *Scleria lithosperma* (L.)Sw. The soils are mostly dark grey sandy loams overlying gneiss rocks.

Few mollusca were found in the grassland and these were represented mostly by shells only—*Marconia gibbosa* Bgt., *Edentulina obesa* Taylor and *Sitala jenynsi* (Pfr.). The most abundant species in the forest itself were a large sculptured species of *Tropidophora* (*T. calcarea* Sow) and the lowland species of regular helicoid streptaxid *Tayloria usambarica* Cr. Other genera and species were *Trochozonites leroyi* Bgt., *Pseudoglessula leroyi* Bgt., *Gulella usambarica*, *Edentulina affinis* Bgr., *Cyclophorus magilensis* Crvn., *Rachis* sp., *Achatina* sp., *Thapsia* sp. and a Urocyclid slug.

## E. Mt. Mlinga.

This is the highest point of a small range of mountainous ground between the E. Usambaras and the coast. The lower slopes are covered with

native cultivations together with some grassland. The flora here includes *Sorghum verticillatum* Stapf, *Cajanus cajan* (L.) Millsp., *Panicum trichocladum* Hack. ex Engl., *Pentas* spp., *Vernonia iodocalyx* O.Hoffm., *Ageratum conyzoides* L., & *Impatiens walleriana* Hk.f. Patches of relict forest are frequently higher up with *Sersalisia usambarensis* Engl., *Albizia* spp., *Pterocarpus* spp., *Celtis* spp. with an undergrowth of *Olyra latifolia* L., *Calloopsis volkensii* Engl., *Costus*, and *Tectaria*. The forest at 3,000ft. is more continuous and has many of the species which characterise the Amani forests e.g. *Cephalosphaera*, *Anthocleista*, *Conopharyngia*, *Allanblackia*, *Calva*, *Hypolytrum*, *Dolichometra*, *Dracaena*, *Parapentas*, *Memecylon*, *Isoglossa* and *Leptaspis*. The most characteristic shrub is *Memecylon greenwayi* Brenan.

*Ledoulxia mossambicensis* (Pfr.) and *Edentulina affinis* Bttgr. occur on the lower slopes together with *Tayloria*, *Marconia gibbosa* Bgt. *E. obesa* Taylor and *Achatina zanzibarica* Bgt. In the forest *E. affinis*, *Cyclophorus magilensis* Cvn., and very old shells of *Gulella grossa* Mts. were found. The latter is recorded from the coast and seems a clear indication that rich forest once occurred there.

## F. Sigi River Valley.

A portion of this valley extending a few miles below Sigi was investigated. The altitude varies from 1,200 to 1,500ft. The river is edged with dry evergreen forest of *Barringtonia racemosa* (L.) Blume, *Parkia filicoidea* Welw. ex Oliv., *Psychotria abrupta* Engl., *Entada phaseoloides* (L.) Merr., *Grandidiera boivini* Jaub. with *Olyra latifolia* L., and *Pentas* spp. The steeply sloping ground above the river leading up to the road is covered with open to closed bushland or scrub with *Markhamia* spp., *Commiphora* spp., *Stereospermum kunthianum* Cham., *Lannea stuhlmannii* (Engl.) Engl. *Steganotaenia araliacea* Hochst., *Grewia holstii* Burret, *Uvaria leptocladon* Oliv., with *Panicum maximum* Jacq., *Commelina* spp., *Cissus* spp., and *Kaempferia* sp. In this bush there are open areas of rocky slope almost bare of soil with *Aeolanthus*, *Cyanotis foecunda* Hack., *Euphorbia systioides* Pax., *Ipomoea mombassana* Vtke., *Merremia angustifolia* (Jacq.) Hall.f. var *alatipes* (Dammer) Rendle, *Commelina*, *Cyperus amabilis* Vahl., *C. oblongoincrassatus* Kuk., *Fimbristylis* sp., *Merremia pinnata* Hall.f., *Jaquemontia tamnifolia* (L.) Griseb. and *Eragrostis ciliaris* R.Br. with scattered bushes of *Gymnolaema newii* Benth. The actual roadside has a mixed flora of *Rhynchelytrum repens* C.E.Hubb., *Ageratum conyzoides* L., *Emilia sagitata* DC., *Imperata cylindrica* Beauv., *Cyperus cyperoides* (L.) Ktze., and *Heinsia densiflora* Hiern. The epiphytic fern *Platyserium angolense* occurs in the dry forest. The molluscan fauna resembles that of the bases of the mountains already mentioned and the following species and genera have been found. *Marconia gibbosa* Bgt., *Tayloria usambarica* Crv. (abundant), *Edentulina affinis* Bttgr., *Gonaxis ordinarius* Sm., *G. vosseleri* Thiele (one old shell only), *Thapsia* sp., *Ledoulxia mossambicensis* (Pfr.), *Trochozonites leroyi* Bgt., *Rachis* sp., and several *Stenogyridae* including *Pseudoglossula leroyi* Bgt., and other *P.* spp. The large coastal *Achatina fulica hamillei* is common and a single small *Atoxon* (Urocyclidae) was found on vegetation by the river. The *Rachis* was climbing up the bole of a tree, not a common habit with tropical mollusca.

## G. Amani; 3,000 to 3,600ft.

Formerly entirely covered with dense evergreen rain forest of the intermediate type, much of the area is now occupied by plantations and residential quarters. The lawns surrounding the houses and some of the meadowland are dominated by the grass *Axonopus compressus* Beauv. together with *Chloris gayana* Kunth., *Euphorbia hirta* L., *Borreria* sp., *Oxalis* spp. and *Centella asiatica* (L.) Urban. These lawns are much mined by the ant *Myrmecaria eumenoides* Gerst. (Koro Koro -Kishambaa) which bring up piles of loose earth and form pits. A snail *Curvella* sp. cf. *conoidea* Mts. seems to be a definite inhabitant of these nests. Large numbers of the shells are found in the loose earth and living ones have been found in the nests and have also been seen being carried by the ants. It is significant to note that Connolly<sup>6</sup> (1939) also states that he has found members of this genus in the nests of ants. The soil here is acid (ph 4.8-5.8) and the calcium content low (0.3-3 milliequivalents of exchangeable calcium per 100gm of soil). The waste ground and roadsides are characterised by *Asystasia gangetica* (L.) T. Anders., *Pteridium aquilinum* (L.) Kuhn., *Pellaea* spp., *Dissotis rotundifolia* (Sm.) Triana, *Polygala paniculata* L., *Hewittia bicolor* Wight et Arn., *Lobelia fervens* Thunb., *Emilia sagitata* DC., *Ageratum conyzoides* L., *Clidemia hirta* D. Don., *Lantana camara* L., regenerating *Harungana madagascariensis* Lam., and *Psidium* spp., *Panicum brevifolium* L., *P. trichocladum* Hack. ex Engl. and *Setaria chevalieri* Stapf. It will be noted from this list that many introduced plants have spread and become quite dominant in certain habitats. They are often pioneer plants. *Clidemia hirta* D. Don. is very abundant by roadsides and forest edges for several miles round Amani. *Lantana camara* L. rapidly covers clearings with an impenetrable thicket which will eventually presumably revert back to forest. Large areas of the forest are covered with tea plantations and though no species of mollusca are yet adapted for living on them the dead shells to be found there are a good indication of the species which lived in the original forest covering. The natural primary forest surrounding Amani consists of very tall trees with straight unbranched boles among which *Piptadenia buchananii* Bak.f., *Myrianthus arboreus* Beauv., *Allanblackia stuhlmannii* (Engl.) Engl., *Odyndea zimmermannii* Engl., *Parinari* spp., *Ocotea usambarensis* Engl., *Tylostemon kweo* Mildbr., *Anthocleista* sp., *Isobertinia scheffleri* (Harms) Greenway, *Chrysophyllum* spp., *Sersalisea usambarensis* Engl., *Cephalosphaera usambarensis* (Warb.) Warb., *Anisophyllea obtusifolia* Engl. and V. Brehm. and *Antiaris usambarensis* Engl. with the epiphytic *Aspleniums* and *Orchidaceae*, are the commonest. There is a layer of shrubs and small trees, characteristic ones being *Mesogyne insignis* Engl., *Whitfieldia elongata* (Beauv.) C.B.Cl., *Isoglossa lactea* Lindau, *Dorstenia holstii* Engl., *Rauwolfia rosea* K. Schum., *Leptonychia usambarensis* K. Schum., *Rinorea* spp., *Memecylon* spp., *Psychotria abrupta* Engl., *Conopharyngia holstii* Stapf, and *Achyrosperrum radicans* Gurke. The most characteristic herbs are *Costus subbiflorus* K. Schum., (particularly in the dampest places) *Afromomum* spp., *Olyra latifolia* L. (not so common as in the lowland forest), *Oplismenus* spp., *Pseudechinolaena polystachya* Stapf., *Leptaspis cochleata* Thwaites, *Isachne aethiopica* Stapf and Hubb., (the last six named being forest grasses of distinctive habit), the ferns *Tectaria*, *Marattia*, *Pteridium* and *Adiantum* spp., the sedge *Hypolytrum heteriophyllum* Boeck, *Impatiens walleriana* Hk.f. and *Calvoa orientalis* Taub. in damper places. Other common herbs are *Justi-*

*cia whytei* Sp. Moore and other small *Acanthaceae* together with some small geophytes of distinctive habit such as *Dolichometra leucantha* K. Schum., *Geophila* sp., and *Crossandra usambarensis* Mildbr. Soil analysis records give figures as high as pH 7 for leaf litter in the forest and pH 6.2 for the surface soil from the forest near Monga. At Ndarema pHs of 4.7-5.0 are the rule coupled with a very low calcium content of the order of 0.4 milliequivalents per 100gm of soil. The soils at Amani are in general red-brown laterised loams easily water-permeable and leached, always acid and with a low calcium content.

Mt. Bomole to the west of Amani has been more extensively searched than other parts of the forest. It rises to 3,600ft. and is mainly forested but large clearings planted with quinine and now covered with *Lantana camara* L. and other pioneer vegetation occur. Near the summit under old plantations of *Cryptomeria japonica* (L.f.) D. Don and *Cupressus macrocarpa* Hartw., snails have been found to be rather abundant under mossy debris which has numerous weathered pellets of *Hyrax* dung intermixed with it. The pH here is 6 and the soil is rather bare save for a few mosses and stick debris though *Setaria chevalieri* Stapf., *Oplismenus* spp., *Panicum brevifolium* L., *Cynorchis uncata* Kraenzl., *Asystasia gangetica* (L.) T. Anders., *Justicia whytei* S. Moore, *Lefeburia longipedicellata* Engl., *Parapentas* sp., *Clidemia hirta* and *Tectaria* occur. Soil records for the clearings on the lower slopes give the pH as 4.5-5 and the calcium content as 1.3 milliequivalents of exchangeable calcium per 100gm of soil. The summit of the mountain has rounded domes of gneiss with a flora of *Melinis minutiflora* Beauv., *Cleome serrulata* Pax., *Pteridium aquilinum* (L.) Kuhn., *Justicia whytei* Sp. Moore, *Cyanotis* sp., *Triumfetta* sp. and *Bidens* spp. Mossy debris occurs in the crevices and the habitat can hold a certain amount of standing water.

As one descends from Amani through the forest the vegetation gradually becomes of the dry forest type and *Olyra latifolia* L. becomes more abundant and such species as *Callopsis volkensii* Engl. appear.

About fifty species of mollusc occur around Amani and some are listed below.

*Streptaxidae*.—*Gonaxis craveni* (Sm.) is a large and characteristic species in the forest. *G. vosseleri* Thiele and *G. ordinarius* (Sm.) are rarer although the var. *obliquior* Haas of the latter is very common under debris near the summit of Bomole. *Edentulina affinis* Btgr. is much commoner at the edges of roads than it is in the forest, but *E. oleacea* Fulton is a rarer forest species. Three *Primigulellae* occur but only one, *Gulella grossa* Mts. is common. *G. foliifera* is rare and a third species (*G. usagarica* Crosse) has only been found as very old shells. *G. usambarica* (Crv.) is gregarious under rotting logs in primeval forest. Twelve minute species of *Gulella* occur and they are particularly abundant near the summit of Bomole. Several appear to be undescribed species. The coastal species, *Tayloria usambarica*, occurs up to 2,800ft. but is rare. Another species of regular helicoid streptaxid has been found near the top of Bomole, but the group is very clearly of nothing like the same importance as it is at the coast. *Helicarionidae*.—*Trochozonites leroyi* Bgt. is common on the vegetation by river banks. The young are

abundant in August and are remarkable for the fact that their long caudal horn is continuously in motion, the tip describing a circle. No explanation can be offered for this fact. A species of *Thapsia* (probably *T. leroyi* Bgt.) which also possesses a long caudal tail is common in the forest and is also occasionally seen on roads.

*Urocyclidae*.—Eleven species including several new ones have been collected at Amani chiefly in waste places and in the damp river-side forest. One large white species which attains a length of six inches is particularly abundant after the rains.

*Endodontidae*.—No species of this family seem to be recorded for the Territory but a single juvenile found in the damp river side forest has proved on examination by the writer to belong to the section *Psichion* of the genus *Trachycystis* and to the species *ambigua* Connolly which occurs in Portuguese East Africa but the genus is characteristic of the Cape.

*Achatinidae*.—One or two closely related species (chiefly *A. zanzibarica* Bgt.) are common in the forest. During the dry months they burrow a short distance below the surface debris and form a tough epiphragm.

*Stenogyridae*.—*Opeas magilense* Crvn. is rare in the forest but several small *Subulinae* are common near the summit of Bomole. *Pseudoglossula leroyi* Bgt. is a common and variable species in the forest, and one other species occurs which is also to be found in the W. Usambara. A species of *Curvella* is rare in the forest.

*Enidae*.—A single specimen of *Buliminus* (cf. *metula* Mts.) has been found at the summit of Bomole.

*Succineidae*.—A species of this usually semi-aquatic genus has been found between the crevices in the rocks at the summit of Bomole.

*Cyclophoridae*.—A large species (*Cyclophorus elator* Mts.) occurs in the forest but no live specimens have been seen.

An interesting relict habit which proved to have a considerable snail population (all belonging to a single species of *Curvella*) occurred in the middle of a tea plantation on red and brown soil at Ndarema. This habitat consisted of a small low flat-topped rock dome of gneiss bare save for small patches of dark brown soil scattered over it bearing a species of *Kyllinga* sedge as the dominant plant. The roots of these provided the habitat for the *Curvella*. The pH of the soil at the roots was 4.7 (that of the rock itself being 6.5) and the general flora at the edges of the outcrop being—*Commelina* sp., *Ageratum conyzoides* L., *Bidens pilosa* L., *Triumfetta* sp., *Hewittia bicolor* Wight and Arn., *Polygala paniculata* L., *Lantana camara* L., *Dissotis rotundifolia* (Sm.) Triana, *Impatiens walleriana* Hk.f., and *Plectranthus amaniensis* Gürke.

## H. Ndola Grasslands.

These grasslands occupy a relatively small area. The pH is 6 and the calcium content 7.5 milliequivalents of calcium per 100gm. soil. They are

however subject to fires which makes them unsuitable for mollusca. The main constituents of the grassland are *Cymbopogon* sp., *Hyparrhenia* sp., *Themeda triandra* Forsk., *Melinis minutiflora* Beauv., *Setaria sphacelata* Stapf and Hubbard ex. M. B. Moss, *Bothriochloa insculpta* Camus, and *Sporobolus indicus* R.Br. with the herbs *Polygala gomesiana* Welw. ex. Oliv., *Gladiolus quartianus* A. Rich., *Commelina africana* L., *Pentas* sp., *Pteridium aquilinum* (L.) Kuhn., *Dissotis* sp., *Habenaria praestans* Rendle, *Urginea comosa* Welw., *Micromeria* sp., *Hypoxis* sp., *Helichrysum* spp., *Aristea alata* Bak., *Vernonia natalensis* Sch. Bip., and *Calotropis busseana* K. Schum. and also scattered shrubs of *Annona chrysophylla* Boj., *Vitex doniana* Sweet and *Heeria mucronata* Bernh. ex Krauss. There is a patch of forest at the headwaters of the R. Sigi in the middle of this grassland. The soil is blackish here and the same trees occur as in the Amani forest. Some nearby slopes have a scrub of bracken and *Aspidia* and may be reverting to forest.

Very few mollusca have been found in either the grassland or the forest. *Gonaxis craveni* (Sm.) and *Cyclophorus* are rare in the latter and one species of *Tropidophora* (*T. letourneuxii* Bgt.) and a small species of *Atoxon* occur very sparingly on the grasslands.

## I. Escarpment of the W. Usambaras.

This was examined between Lushoto and Mombo very briefly at an altitude of 1,500ft. The area is covered with rocky outcrops and bushland with trees. The most characteristic species being *Dombeya* sp., *Cordia abyssinica* R.Br., *Acacia* spp., *Isobertinia paniculata* (Benth) Hutch. ex Greenway, *Albizia* spp., *Sclerocarya caffra* Sond., *Commiphora* spp., *Terminalia brownnei* Fresen., *Euphorbia mbaluensis* Pax and other related spp., and *Steganotaenia araliacea* Hochst. together with *Adenia keramanthus* Harms, *Tridax procumbens* L., *Heliotropium* sp., *Amaranthaceae*, and the fern *Actiniopteryx australis* (L.) Link.

The only species of snail found here was a large form of *Ledoulxria mossambicensis* (Pfr.)

## J. Mkusi Forest, on the plateau of the W. Usambaras (5,500ft.)

The annual rainfall here is of the order of 35", and the forest is of a very different type from that at Amani. The soils are chocolate brown, and the characteristic components of the forest are *Podocarpus* sp., *Ocotea usambarensis* Engl., *Cassipourea* spp., *Erythroxylum emarginatum* Schum. et Thonn., *Parinari* sp., *Xymalos monospora* (Harv.) Baill. with *Crotalaria* spp., *Tinea vesiculosa* Gurke, *Pilea* sp., *Impatiens walleriana* Hk.f., *Vernonia iodocalyx* O.Hoffm., *Cardamine* sp., and *Oplismenus* sp. The molluscan fauna is quite rich. *Edentulina affinis* Btgr., and *Gonaris ordinarius* Sm. var. *obliquior* Haas are scarce. A large *Gulella* of the section *Primigulella* is frequent and besides *G. usambarica* Crv. six minute species occur, two of which also live on Mt. Bomole. Shells of a species of *Tayloria* have been found. *Thapsia* occurs and several *Subulinae* are common. Two species of *Pseudoglossula* occur including *P. leroyi* Bgt. Only

one Urocyclid slug was discovered. A species of *Tropidophora* is frequent at the edge of the wood and the small *Cyclophorus volkensis* Mts., occurs.

## K. Sungwe.

A few specimens collected by M. Gane, Esq. have been seen from this locality. These were collected along an old railway tramline that passes through some old Cypress plantations near Sungwe Mountain. The tall trees cast a lot of shade and there is practically no ground flora save for patches of regenerating cypress and the ground is covered with dead leaves. The same *Primigulella* as occurs at Mkusi is common here and the collection also contained a large *Thapsia* and the upland species of *Tayloria*.

## L. Ndamanyilu, 5 miles west of Malindi in the W. Usambaras (5,800-7,000ft.)

The rainfall here is about 30" or perhaps even less and the soils are reddish, chocolate or grey-black. This area consists of hills separated by grassy valleys, and the hills bear a very disturbed dry upland evergreen forest. The trees are not very tall (c. 50ft.) and are rather widely spaced there being many open clearings. The dominant tree is *Juniperus procera* Hochst. ex A.Rich., together with *Trichocladus malosanus* Bak., *Maba* sp., *Trimeria* sp., *Buddleia* sp., *Euclea* sp., *Scutia* sp., *Rhus* sp., *Rhoicissus erythroides* (Fres.) Planch., *Catha edulis* Forsk., *Casearia* sp., *Flacourtia* sp., *Scolopia* sp., *Warburgia* sp., *Rawsonia* sp., *Manilkara* sp., *Clausena anisata* (Willdn.) Oliv., *Psiadia* sp., *Aloe* sp., *Kalanchoe* spp., *Helichrysum* sp., *Penisetum clandestinum* Hochst. ex Chiov., and *Sida schimperiana* Hochst. ex A.Rich. this latter also being common in the valleys. The ground layer chiefly consisted of a species of *Justicia* possibly a very depauperate form of *J. pinguior* C.B.Cl.

Mollusca are abundant in the ground layer in individuals if not in species. A species of *Halolimnolix* inhabited the loose earth under the tussocks of *Justicia*, and a small species of *Tropidophora* was also abundant. A small species of *Primigulella*, closely allied to the one which occurs elsewhere on the western plateau, was discovered together with a few shells of the upland species of *Tayloria*, and *Gonaxis ordinarius* (Sm.) var. *obliquior* Haas. *Streptaxidae* form however a very insignificant part of the fauna.

## M. Mkomazi.

The vegetation here is very arid, the annual rainfall being some 10". Scrubby trees and bushes of *Acacia* spp., *Salvadora persica* L., and *Delonix elata* (L.) Gamble occur and the ground is bare but for *Cissus quadrangularis* L., *Barleria* sp., and *Caralluma* sp. A large smooth species of *Tropidophora* (*T. anceps* Vn. Marts.) and a large thick shelled *Achatina* (cf *A. lactea* Reeve) are the dominant snails.

## N. Aquatic Environments.

1.) R. Kwamkuyu and R. Dodwe. These small rivers support no truly aquatic plants and the water rushes over masses of loose rocks. *Cleopatra*

*africana* (Mts.) is the only mollusc which has been found in the streams. It is exceedingly abundant particularly in pools at the edges where the water is slow moving.

2.) R.Sigi. At the mouth of this river the fauna previously mentioned in § 3 occurs and also for some distance from the mouth. In the foot hills however only *Lanistes farleri* Cvn. has been found in the mud at the banks.

3.) Two ponds on the E.Usambara plateau have been examined. One at Ngua has the bottom choked with dead leaves from the surrounding trees which cast a good deal of shade. The soil on which it rests is black. The dominant plants are *Lemna minor* L. and *Wolffia arrhiza* (L.) Wimmer, there being no reed zone. The only snail found in the pond was *Physopsis africana* Krauss. A pond at Ndarema on red soil had a distinct reed zone of *Syperus colymbetes* Kotschy Peyr., and semiaquatic plants including the introduced *Sagittaria montevidensis* Cham. et Schlecht. *Nymphaea* sp. occurs in the more open parts, and the pond degenerates into a swamp at one end with the fern *Dryopteris gongylodes* (Schk.) O.Ktze. dominating. *Physopsis africana* Krauss and *Lymnaea natalensis* Krauss occur. An artificial lake at Amani planted with water lilies, *Ceratophyllum*, and *Sagittaria* has also become sparingly populated with snails. *Physopsis africana* Krauss is infrequent on the marginal plants and a single specimen of *Ferrisia* sp. (Ancyliidae) related to a Portuguese East African species has been discovered.

#### 4.) R. Pangani at Mauri near Korogwe.

Small pools on bare rock where the R. Pangani nearly touches the main road have a more prolific fauna than the plateau ponds. These pools are muddy and dry up during the dry season, but they are covered with water during the wet period. The truly aquatic plants are represented by *Pistia stratiotes* L., *Azolla*, and *Ceratophyllum*. *Panicum repens* L., *Cyperus* spp., and *Asteracantha longifolia* (L.) Nees also occur in the mud. The river rushes through a very narrow rocky bed at this point and extensive *Papyrus* swamps exist to the south.

*Cleopatra amoena* (Morel.) dominates these pools and shells of the following were also found *Ancyliidae*, *Melanoides tuberculata* (Mull), *Viviparus unicolor* (Ol.), *Pila* sp., *Bulinus forskali* (Ehrgh.) *Physopsis africana* Krauss, *Planorbidae*, and *Succinea* sp.

5.) Two ponds and one swamp on the western plateau have been investigated.

A pond in the grassland between the ridges at Ndamanyilu contained *Typha* sp., *Lythrum rotundifolium* Hochst., *Potamogeton schweinfurthii* A.Benn., and *Polygonum* sp. as the dominant plants. A species of *Gyraulus* was abundant at the roots of the *Lythrum* and a species of *Bulinus* occurs. A very similar artificial pond at Mkusi also contained the same *Gyraulus* (but very sparingly) together with *Lymnaea* sp. which was feeding on the *Potamogeton*. A swamp next to this artificial pond had an extremely interesting though sparse fauna. This habitat is dominated by *Typha* sp., together with *Nasturtium officinale* R.Br. and *Crassocephalum pierdifolium* (DC.) Sp. Moore. A species of *Punctum*, a genus not recorded from

East Africa was scarce at the roots of grass at the edge of the swamp together with a species of *Pisidium*, a genus of minute bivalves which have only rarely been recorded from Tanganyika. A single shell of a *Lymnaea* closely resembling the European *L. truncatula* (Mull) (the carrier of the liver fluke), a small Urocyclid slug and a small juvenile of a *Ledoulxia* sp. also occurred with the *Punctum*.

## 5. Summary and Acknowledgements :

An attempt is made to correlate the distribution of land and fresh-water mollusca in N.E. Tanganyika Territory with the vegetation regions. A selection of habitats is described. Three zones are distinguished, the lowland zone, the intermediate zone and the upland zone. The intermediate zone is distinguished from the other two by the paucity of *Pomatiasidae* and the abundance of the Urocyclid slugs. The upland zone is distinctive through the presence of true *Helicidae* in abundance and the absence of the genus *Achatina*.

The writer wishes to acknowledge the very great assistance he has received from P. J. Greenway, Esq., O.B.E., F.L.S. without which very few opportunities for collecting would have been possible.

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**ONE HUNDRED YEARS AGO IN TANGANYIKA****By the Editor**

The interior of East Africa was almost completely unknown one hundred years ago. The configuration of the coast, on the other hand, was fairly well known, and historical places such as Pate, Malindi, Mombasa, Pangani, Sadani, Bagamoyo, Mboamaji, Kilwa and Mikindani were shown on maps of the period. It was known that there were very large lakes and mountains in the interior but where exactly these were situated and how far from the coast were matters of speculation. From time immemorial it had been thought that the sources of the Nile were to be found in the interior near the Equator, and the "Mountains of the Moon" were commonly supposed to give rise to them, but, since Ptolemy's time, the truth or falsity of this supposition had not been confirmed. By the middle of last century information received from Arab traders\* who had penetrated far inland (from about the year 1840 onwards) confirmed the existence of vast sheets of water in the interior. The first Europeans to make contact with these Arabs came to the conclusion that their report of inland waters indicated the existence of one great interior sea and in 1852 Erhardt and Rebmann compiled the famous "Slug" map, showing what are now known as Lakes Victoria, Tanganyika and Nyasa as one huge slug-like inland sea.†

By then Krapf and Rebmann, German missionaries working for the Church Missionary Society, had been established for several years at their mission station at Rabbai Mpia near Mombasa. Both were intrepid explorers as well as being devoted missionaries, and accounts of their first "Excursions on the Mainland," as they called them, are to be found in Krapf's famous "Travels, Researches and Missionary Labours during an Eighteen Years' Residence in East Africa", published in 1860. This book contains the diaries of their several journeys to the interior and makes fascinating reading, but it is perhaps not so well known as Krapf's Swahili dictionary—a remarkable compilation considering that it was the first attempt to reduce the language to writing (other than Arabic) and, despite its peculiar orthography, still of great interest to the student of the language.

But, one need hardly say, the dictionary had not been compiled at the time of which we are now speaking. Before Krapf's fellow-worker, Rebmann, took his umbrella in his hand and, accompanied by nine porters, set out into the unknown, the only other European who is known to have penetrated beyond the coast-lands was the Frenchman, Maizan. He was a young "enseigne de vaisseau" in the French navy who attempted, without proper preparation, to make an east-to-west crossing of the continent and was murdered, in 1845, by a local petty chief at a place called Dege la Mhulo's, near the present ferry over the Ruvu river on the Dar es Salaam-Morogoro road.\*

Rebmann made his first journey to "Jagga" between April and June, 1848, and was the first European to catch sight of the snowy peak of Kilimanjaro. He thus describes the experience:

\*Cf. Page 3.—Editor.

†Published in 1856.

\*See "Maizan", by A. Sillery, "Tanganyika Notes and Records", No. 10. p. 39, Dec. 1941.

"In the midst of a great wilderness, full of wild beasts, such as rhinoceroses, buffaloes, and elephants, we slept beneath thorn-bushes, quietly and securely under God's gracious protection. This morning we discerned the mountains of Jagga more distinctly than ever; and about ten o'clock, I fancied I saw the summit of one of them covered with a dazzlingly white cloud. My guide called the white which I saw, merely 'Beredi,' cold; it was perfectly clear to me, however, that it could be nothing else but snow."

It appears that in those days the country and not the people were known by the name of Chagga or "Jagga".

Rebmann returned to the area for a second time at the end of 1848 and made a third journey there in 1849. This last journey was made, not so much with the object of visiting "Jagga", as in an attempt to penetrate into "Uniamesi"; but the rapacity of the Chagga Chief Mamkinga was such that poor Rebmann was stripped of all his goods and had to return disconsolate to the coast.

In the meantime, between July and September of 1848, Krapf had made his first journey to Usambara and in November-December he had penetrated "Ukambani". In February and March, 1850, Krapf and Erhardt had prospected the coastline of the territory between Mombasa and the river Ruvuma. It seems that, although they spent a night on Sinda island, the existence of a harbour at what is now Dar es Salaam was not known to them. After his return to Rabbai Mpia Krapf went to Europe for a short time but was back in East Africa in the middle of the year 1851 and between July and September of that year made a second journey to "Ukambani".\*

In 1852 Krapf, a few months after his return from this second journey to Ukambani, determined on a second journey to Usambara, in his own words, "to procure a renewal and confirmation of the permission given me by its King in 1848 to found a missionary settlement in his territories". He was convinced that the route to Unyamwezi (by which he meant the whole interior of the country) was to be found in Usambara and the countries to the south of it, and he had in mind the establishment of a chain of missions throughout southern Africa with the two ends of the chain meeting in Unyamwezi. He therefore sent messengers to "King" Kimweri at Vuga, which was then, as now, the capital of Usambara, and himself proceeded to Tanga to obtain permission from the local "governor" for his journey. He was declined permission without written orders from the Sultan of Zanzibar and therefore had to proceed there in person to obtain a letter from Seyyid Said. On the 20th February he arrived back at Pangani and found the messengers he had sent to Vuga awaiting him there. They told him that on the way they had been stopped by one of the local "governors" who had informed them that he, together with the Mdoe or royal vizier and the Mboki or military chief, was about to proceed to Pangani to collect tribute and that he would be pleased himself to escort the European visitor to King Kimweri. Krapf was naturally delighted to find that his journey would thus be made so much easier for him and that he would have such an influential escort. No doubt he was

\*Krapf's own vivid account of this experience is to be found in the series "Early Travellers in East Africa" published by the East African Literature Bureau under the title "Krapf, Missionary and Explorer" by C. J. Richards.

struck by the contrast between such an expedition and his second journey to Ukambani when he was attacked by robbers, spent several days wandering in the bush by himself, and barely escaped with his life.

"I had no trouble either with the chiefs of the Pangani village or with baggage bearers, the Mdoo of his own accord having promised to have my luggage transported by his own soldiers".

Krapf was delighted to find himself in a country where order reigned and contrasted it with the "lawless reprobates of the Wanika and Wakamba". He thought that only in the Kingdom of Shoa in Abyssinia had he seen anything similar and his German love of orderliness and his own monarchical tendencies are clearly shown in his diary.

He thought little of the inhabitants of Pangani, saying that "they are in rather ill odour from their sensuality, their idleness and their propensity to deal in slaves", but he admitted that they were good cultivators and had obtained "great influence among the heathens in this district." The local inhabitants sold all their produce to the petty traders in Pangani (which they do to this day), and Krapf noted that the trade then consisted of "rice, Indian corn, horned cattle, sheep, goats, ivory and slaves", and that there was no direct trade with Zanzibar although this was what the tribes in the interior, left to themselves, would have preferred. He noted that the Pangani area was subject to King Kimweri and brought him tribute although this did not amount to very much, being at the time of his visit 200 yards of amerikani of the value of from 50 to 60 dollars, i.e. about Shs. 200/- This tribute was exacted once in every two or three years.

As the safari proceeded and he approached the mountains, Krapf was greatly struck by the fact that the local headmen did not demand the usual *hongo* (tribute), the necessity to pay which had made his other journeys so wearisome. "Never have I travelled anywhere so comfortably as in Usambara", he says, "for here I am not tormented by the monster Mendicancy; or, at least, it assumes a very modest form; whilst, as for security, I do not believe that anyone could be safer in any European country than in Usambara provided the country is not in a state of war". He thought that parts of the country reminded him of Switzerland or the Black Forest, but the altitude and the steepness of some of the hills began to tell. On the 29th February he recounts how they ascended "the lofty Kombora, 4,000 feet high, and which is, in fact, a mountain range stretching from north to south. Hitherto we had crossed only small hills of 600 to 800 feet in height; now we began to ascend the alpine region of Usambara. At first Kombora is not very steep, but towards the middle of the ascent the path became extremely difficult and slippery, so that at every third or fourth pace I was fain to lie down on the ground and take a rest as my chest and feet gave me great pain, so that I was inclined to say to myself: 'Better two journeys to Jagga and Ukambani, than one across this precipitous mountain-land'. The natives, indeed, think little of this mountain climbing, to which they are accustomed from their childhood; but with their loads upon their heads they climb up the rocks like monkeys and they make game of the lowlanders to whom journeying on the heights is laborious and painful. About six in the evening we reached the summit of the Kombora, where we were rewarded for our exertions

by a magnificent view of the sea, and the lofty mountains and valleys in the neighbourhood."

After their long climb, however, they found that the nearest village could give them nothing but "a little Indian corn and bananas"; but Krapf's comment is not commiseration for himself but appreciation of the local people. He comments, "Notwithstanding their hard fare, how simple and tranquil is their life on their lofty, cold and isolated mountains! You hear no wailing, no quarrelling, no drunkenness, no idolatry; each goes his own way quietly and tends his cattle or tills the soil, seemingly harmless and happy; but seemingly only, for how can we call a man 'happy' who passes life away without a knowledge of God". He goes on to hope that the day will come when superstition will be driven out and "the sound of the Sabbath-bell will be heard from mountain to mountain and from valley to valley". "Then", he says, "will first be made manifest the bright destiny and rank of this wonderful alpine land, which will one day bring to light treasures, both animate and inanimate, long hidden from view, from out of the soil itself no less than from the depths of its vast wilderness".

As they passed from village to village Krapf noted that in most of them the village head was a son or daughter of Kimweri and he records the following information which he had obtained about the monarch:

"Kmeri (sic.) is the fourth monarch who has ruled over Usambara since it became a kingdom, it having been founded by his great-grandfather, who came from the mountains of Nguu, three or four days to the south-west of Usambara. The first two kings possessed Usambara merely as far as Bondei, a district conquered by Kmeri's father. In his younger days Kmeri himself was a great warrior who made journeys of inspection through his whole realm as far as Pangani. Formerly, his kingdom was more extensive, before he lost a portion of the Wadigo land and other territories. In the Wasegua land, he lost his influence through European traffic which brought fire-arms to Zanzibar and these the Wasegua were the first to make use of and turn against the armies of the king".

At this point in his diary Krapf turns aside to make a typical comment on the iniquity of the traffic in fire-arms, exclaiming, "Oh! that the world would but believe that in politics, as in trade, every crooked and perverse course would bring down its own judgment upon it and would be punished in the very way in which the sin has been committed!"

On 3rd March they reached Utinde, on the summit of what Krapf called one of the loftiest mountains of Bondei, a solid block of granite, rising abruptly like a perpendicular wall and forming an impregnable natural fortress. From this point Krapf could survey almost the whole of Kimweri's dominions and he says that he did not remember having met "a grander prospect in any African country". But he was growing weary of climbing up hill and down dale and found the journey increasingly exhausting. "Here we skirted a precipice, there we had only a shrub or some tufts of grass to help us in clambering up the precipitous path. In ascending the tendons of my ankles, in descending my knees and legs, pained me. Nor could we journey as we pleased as we had to direct our course in accordance with the distance and position of the villages where

we might find food for the night, for in Usambara anyone found by night in the woods, or absent in a village, is taken up for a robber; but independent of this the cold and other circumstances would not permit it". He records how he looked in astonishment at his Wasambara baggage bearers who clambered up and down the hills with the greatest ease. He describes them as follows:

"The Wasambara are in general of the middle size. The colour of their skin is yellowish, and their frames strong enough to carry burdens. Their mode of life is of the simplest; the banana roasted or boiled is all that they require, and all that in many places they possess besides their herds. The cool mountain air and the simplicity of their mode of life contribute apparently to the excellent health which they enjoy; for except in the shape of rheumatism and cutaneous disorders, illness is apparently unknown to them. The working men have not in the ordinary way more than one wife apiece; not that they are forbidden to have more, but they are too poor to be polygamists."

Krapf noted that Usambara was much poorer than the Bondei country and the lowlands generally but could not help thinking that they might be so much better off if they knew how to avail themselves of the natural resources of their country. "How many mills and factories might be driven by the numerous streams of this region!"

At last they reached the foot of the hill on which the capital was situated and were there met by a troop of soldiers who fired a salute in honour of the stranger and then conducted Krapf to one of the many huts which were set aside for the use of strangers. Even a bedstead was forthcoming and Krapf remarks that everything possible was done to lodge him comfortably. The captain of the king's bodyguard appeared with a sheep and other provisions and one Bwana Osman, "a Mohammedan of Zanzibar, who fills the offices of king's physician, chief-magician, and court-jester", also paid his respects. Krapf sent word to Kimweri of his arrival and asked to see him. Kimweri sent back word expressing great pleasure at Krapf's return to Usambara and granting him permission to form a missionary settlement at Tongwe.

While he was waiting for an audience with Kimweri, Krapf learnt something about the Wadoe, "who were in bad odour on account of their cannibalism". He recounts how the Wadoe are said to have ruled at one time over all the country to the south of the Pangani as far as the Nguu Mountains in the west, but the Mohammedans of the coast united and in a decisive battle completely vanquished them. He notes in his diary a story that one of the earlier kings of the Wadoe is said to have formed the design of conquering the kingdom of Usambara but that when he arrived in the vicinity of the first mountain he observed a dense fog on it, which he took to be the smoke of tobacco-pipes. He concluded that the number of the enemy must be so large that his own army could effect nothing and thought it wiser not to disturb these countless hosts of tobacco-smokers upon their mountains.

At last, on 14th March, Kimweri arrived on foot at Vuga. "I stationed myself by the side of the road to greet the king in passing; and as soon as he saw me he stood still and looked at me without saying a word, and then went into the hut of his chief medicine man, Osman. He wore over his

ordinary dress a Boshuti, or a thick cloak of black cloth, to protect him against rain and cold, and, like most of the African potentates whom I have seen, he went barefoot. After he had seated himself on a bedstead in the hut he took, without saying a word, a tobacco-pipe, and began to smoke with great gravity, which in savage life is unmistakeable evidence of monarchical dignity.

"A number of people from Fuga and other places came and addressed their sovereign with the words, 'Simba', or 'Shimba wa Muene', Lion of heaven, or, as the expression may be also translated, 'Thyself, thou art the lion'; to which his only reply was a humming 'M', and those who had thus saluted him retired to make room for another party; so that, after all, but for the more formal ceremonial, the levee of a black king bears a strong affinity to that of his white brother. This ceremony being over, and only a few courtiers with the chief medicine man, Osman, surrounding him, I explained to the king why I had not been able to fulfil the promise which I had made in 1848 to return to him at an earlier period. I told him that I had been twice to Ukambani, that then I had visited my friends in Europe, and that I had been prevented by my labours at Rabbai from returning earlier to Usambara. The king appeared to be satisfied with this explanation, and I retired to my hut. Kmeri looked much older than in 1848, but he had the same piercing eye as then. He is a large stout man, in appearance very like Kivoi, whom I have mentioned in the account of my journey to Ukambani."

Krapf goes on to say, "I was sad at heart as I contemplated the old king, lying on his bedstead, revered and flattered by his courtiers and magicians, complacently surveying his presents, or taking them in his hands and turning them over; for I was compelled to note his utter indifference to the message of peace and of eternal happiness which I would so gladly have offered him by bearing testimony to the gospel of reconciliation. Sitting at his feet and sighing inwardly, I waited anxiously for the moment when it might be possible for me to engage the king in a conversation on spiritual matters; but the chattering of the people around him, and his own love for the things of this world, did not allow me to do more than to explain in a general way the chief duties of a missionary."

Krapf never forgot that he was firstly a missionary and only secondly, and indeed only very incidentally, an explorer, yet he was observant and interested in all that he saw and heard. He recounts that, while he was at Vuga, he was much interested by what he heard about the Ala, "a dispersed little tribe which inhabit the forests of the wilderness and live by the chase". He goes on to say that "the Wasambara call these people Wassi; and the Wakuafi, who look upon them as their slaves, call them Wandurobbo. A number of these Ala are said to dwell in the vicinity of the Wakuafi in Masinde, and the Pangani people repair to them continually to purchase ivory. It seems as if the Ala were a surviving remnant of the aboriginal inhabitants of Eastern Africa; they are found in the interior and on the coast, in Shimba, in the Wanika-land, and at Daluni and Bondei; and are neither agricultural nor pastoral, but live in the woods on the produce of the chase; so that wherever they kill an elephant or other wild beast they remain until it is consumed. They are said to speak a language which no other East Africans understand; and the Arabs maintain that the Ala came originally from Arabia, and therefore they will

neither buy them nor sell them as slaves. The Wanika of the Duruma tribe call the Ala, Masaka, and are reported to have sold many of them into slavery in the time of scarcity."

The day of his departure arrived, and Krapf recounts how he bade farewell to Kimweri.

"I repaired this morning to the king, to take my leave, representing to him that I was in haste to return before the rainy season set in, when the rivers could no longer be passed, and the ground would be extremely slippery. After a short pause, using a kind of form, the king said: 'I grant the European his request without reservation, and I commission thee, O Mbereko, to carry out my will'. Mbereko then took the king's right hand and pressed it against the king's body, which is done to denote a kind of adjuratory assurance. By this act Mbereko became my Mlaw, or guide and intermediary; for every governor, even although he be the son of the king, must have a Mlaw at the court of Fuga to whom he communicates all his affairs, and who lays them before the king. Mbereko is the Mlaw of the Pangani and the Tongue districts."

After the King had finished he ordered Mbereko to accompany Krapf to the coast, and to give him "an elephant's tusk and two slaves", and three sheep for the journey. Krapf accepted the offer of the sheep, but declined that of the ivory and the slaves. Krapf's farewell present in return took the form of "twenty-seven grains of ipecacuanha, which had the desired effect". "But", says Krapf, "I feared the consequences if anything went wrong with him; for the chief Mabewa put a physician to death whose treatment of his wife had been such that she expired under it."

Krapf returned by a different route, keeping to the south and south-east so as to avoid as much as possible of the mountains and on the 30th March he arrived back at Pangani. He himself sums up the results of this and of his former journey to Usambara by saying that the "king" was disposed to admit missionaries to his country and would allow them to select their own locations, that it was a country with many and large villages where a missionary could address masses of people when he had won mastery of the language, and that the local inhabitants were accustomed to order, were peaceable, not without intelligence, and had a desire for self-improvement. He goes on to remark sagely that "it is indispensable that missionaries should conduct themselves towards the king with all respect, and carefully avoid the slightest semblance of political interference in affairs of the country. Europeans often commit the fault of not paying sufficient respect to a native ruler, because they find in his demeanour to them that he is coarse, given to begging, selfish, suspicious and unrefined; so that it is indeed, difficult to pay him always proper respect; but a missionary must make it a principle in that case, as in every other, to deny himself for the sake of the Master whom he serves." He considers that there should be no great difficulties with regard to transport since the governors were bound to have the effects of a traveller transported by their peasants or soldiers and that, in any case, for half a dollar or a dollar a missionary could hire people to go a tolerable distance. Finally, he thinks that in the alpine country the climate cannot be other than favourable to the constitution of Europeans, although they must be prepared for an attack of fever of longer or shorter duration; "for as yet,

no European in any African country whatever has wholly escaped the attacks of fever and it is, once for all, an inevitable ingredient in the cup which must be drunk by every missionary in East Africa”.

As regards the future in general of the whole of East Africa, Krapf's considered opinion, given exactly 100 years ago, is as follows:—

“In our own day a disintegrating process is ever spreading among the nations of Eastern Africa, and the East Africans themselves avow that things went better with them in their fathers' time; that greater kings and chiefs existed then than now, and that a new element must be introduced among them. The descendants of Ham have outlived themselves; it is, therefore, evident that the descendants of Japheth must steer the vessel by the might of Christianity, the only safe rudder for East Africa, as for all other continents. The Gospel alone can save Africa from complete destruction.”

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**A NOTE ON THE HANDENI MUSEUM.**

**By T. R. Sadleir.**

In August 1951 the Handeni District Tribal Council decided to start a museum with the two-fold object of preserving the memories of the past and encouraging present-day arts and crafts.

With the exception of a few enthusiasts the people were naturally somewhat apathetic at the start and it was difficult to convince them that purely utilitarian objects could at times possess artistic merit.

The historical and heraldic side appealed more strongly than the cultural to a people well versed in genealogies and legend.

The first exhibits to appear reflected the stormy history of the Zigua and Nguu tribes: Portuguese and Arab cannons, grim reminders of successive occupations; spears, swords, shields and clubs used by the great-grandfathers of chiefs to fight the Masai, pillage their neighbours, or execute their subjects. Most of these weapons were traditional—royal symbols, possessing in some cases ritual significance, lent by the chiefs. Exhibits from poorer people were bought out of a sum of Shs. 500/- kindly made available by the Commissioner for Social Development.

Some of the chiefs also lent copper and brass trays, and wooden chests and gold bracelets presented to their ancestors by Arab slave traders in return for safe passages, ivory and slaves.

Modern arts are best represented by some very good wood carvings in ebony by Fundi Davis who excels in lovely life-like studies of people and animals. Women have contributed baskets and earthen pots, men carved walking sticks, hoes, mortars and bows and arrows. A neighbouring chief in Tanga District presented a carved Bondei table and silver bracelets made by a silversmith at Muheza.

It was decided to house the museum in the Council Chamber of the Native Administration building, which was specially done up for the occasion. Glass-fronted show cases were made by local carpenters for the smaller objects and for the books of the existing library, whilst the larger exhibits were prominently displayed around the walls. It was thereby sought to avoid the somewhat sterile atmosphere of a museum, and at the same time it was hoped that the councils of the present would derive inspiration from these visible evidences of past glories, and not merely seek an alien heritage.

This dual purpose was symbolized in a statue of Seuta, the warrior hero of the Zigua and Nguu, the unveiling of which by Mr. Gill, Provincial Commissioner, Tanga, on the 5th December, 1951, marked the formal opening of the Museum. Seuta means "son of the bow" in Kizigua and the name was bestowed on a legendary figure called Mganga, who is reputed to have led his people in a guerilla war against the Portuguese, teaching them for the first time the use of the bow and arrow as a weapon of war. The bow and arrow has thus become the emblem of the Zigua and Nguu peoples, and the office of Chairman of the Tribal Council has since been renamed Seuta.

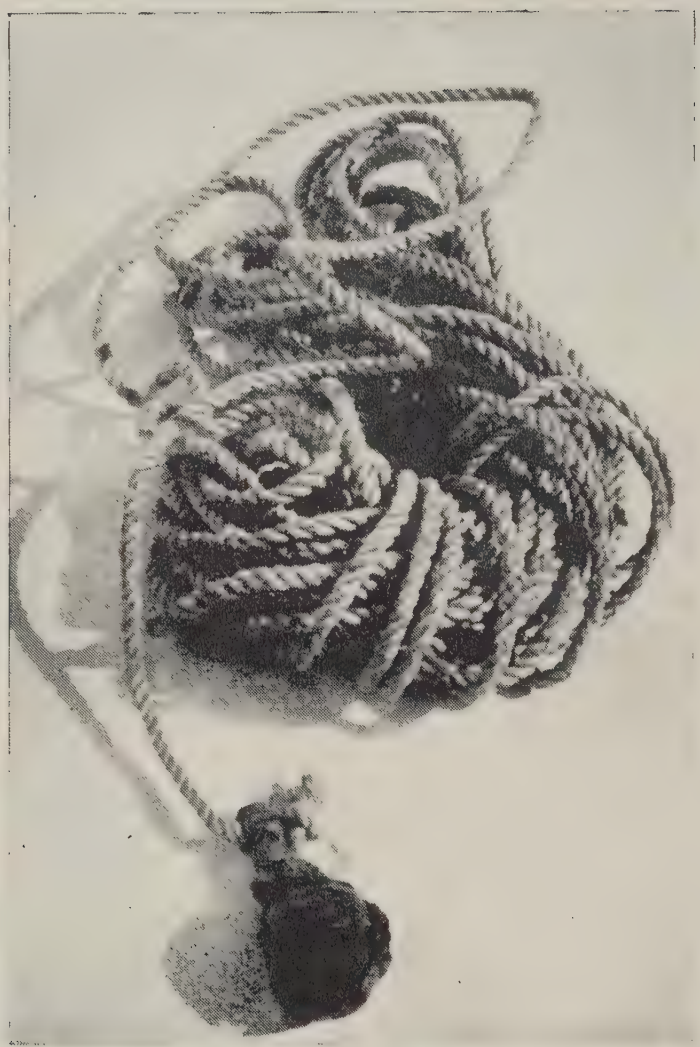
The statue made in clay, was well executed by Mr. Paulo Nkanyemka, the Secretary of the Tribal Council, who studied art at Makerere under Mrs. Trowell: it shows Seuta aiming his bow and arrow at an unseen foe.

The Museum serves an important secondary purpose, in giving visitors to Handeni some idea of the history and culture of the local inhabitants.

In conclusion, it must be stressed that the Museum is still in its infancy and contains at present not much more than a few old weapons and African handicrafts, such as can be found all over Africa, hurriedly got together and hung on the walls of the Local Council Chamber. Such interest as it has lies mainly in its attempt to show the people that they too have something worthwhile to contribute to the civilization of mankind.

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A Sandawe stone-weighted climbing rope.

## **A SANDAWE CLIMBING ROPE.**

**By G. Hunter, Curator, King George V Memorial Museum.**

The men of the Sandawe tribe in the Kondoia district of central Tanganyika are keen honey collectors and use an interesting climbing rope to assist them in their task.

The rope, usually of excellent quality, is made from the fibre of the baobab tree, and a stone, encased in a leather jacket, is attached to one end. The rope illustrated is 84 feet in length and from 7/16" to 1/2" in thickness.

The weighted end of the rope is thrown over a branch of the tree and the stone lowered to the ground. Grasping the doubled rope, the honey collector climbs to the branch and extracts the honey from beehive or wild swarm, putting it in his gourd flask which is fitted with shoulder straps.

Nearly every Sandawe household contains one of these climbing ropes.

Sandawe stone-weighted ropes were first referred to by von Luschan (Werther, *Die mittleren Hochländer des nördlichen Deutsch-Ostafrika*, Berlin, 1898) who suggested that they were used in some way as a hunting weapon.

The object used to weight the end of the rope is the hard stone, originally used for pecking the surface of a grindstone, which has become too smoothed and rounded by hammering to be of any further use. These discarded stones can be found in all parts of Tanganyika. The larger hammer stones usually attain a more perfect spherical shape than the smaller ones as they are easier to handle and are therefore retained in use for as long as possible.

The use of stone balls as weights for climbing ropes provides yet another possible explanation for the presence of the spherical stone balls found at various prehistoric sites.

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## SEEN IN THE OPEN.

### 1. Bitterns, Coqui francolins and Temminck's Coursers.

Gill, in his *First Guide to the Birds of South Africa*, says, on page 172, nine lines down, "no race of bittern is known in Africa between the Zambesi and the Sudan." In 1937 I shot in the Rufiji, and examined, an African Dwarf Bittern as described on the same page. In October 1951 in the Suguti valley, Musoma area, I saw at twenty yards distance a young Cape Bittern squealing in fear as it took refuge in the lower forks of a leafless fallen tree from two grey harrier hawks. (These grey harrier hawks are the common chicken-takers in Tanganyika).

Coqui francolins with red crests and red rumps seen in flight are birds I see in the thorn veld north of Speke Gulf, Victoria Nyanza. I have seen red-crested francolins further east but did not flight them nor notice the red rumps.

Temminck's coursers in the game flats of N. Mara and in the Majita Peninsula north of Speke Gulf have surprisingly bricked crests.

R. de la B.B.

### 2. Note on Colours and Light Effects.

A pink elephant was the first seen by a newly arrived game ranger in Tanganyika 1922. The sunlight and the colour of the mud bath or dust bath the elephant had used produced this effect. Other elephants in other soils use black mud and appear black, and similarly in north Africa a man's garments would get black with black soil dust.

Light under certain conditions plays strange tricks. A mine beacon on the Wembere plain showed white or grey or black or was quite invisible according to the angle of the sun, the cloud shadows or other circumstances of the atmosphere.

Once I saw sable antelope who were to my eyes cerise. Females are ruddy brown sometimes and the morning light on these females standing against vivid green foliage made them look cerise.

R. de la B.B.

### 3. A Strange Bush Tableau.

Many years ago when I was walking through the bush in the Shinyanga area on a fly-round or some similar job, I came upon a "tableau" which was so unique that it remains as vivid in my mind today as when I first saw it.

I was, as I remember, crossing one of the pieces of miombo forest in Block 11 and was approaching a small glade, when I noticed two "hunting dogs" (*Lycaon pictus bettoni*) walking about on the verge of the glade. I stopped to look what they were up to and my eye was immediately drawn by a movement in the glade itself. My view was obstructed by the trees, but I saw at least one eland, which kept on lowering and raising its head,

which immediately made me assume it was at bay with the hunting dogs. I therefore crawled up to the edge of the glade to have a look.

What I saw was one of the oddest of many queer things I have seen in the bush. Eleven eland were standing in a ring, heads outward, while in the middle of the ring formed by their rumps (a circle of, maybe, 10 feet diameter) was something that at first sight looked like a large black blanket with a lot of children or dogs playing underneath it! The grass obstructed my view a little so I cautiously raised my head further and saw that the black blanket was, in fact, a mass of vultures gobbling away at a prey, which was completely covered by their heaving, struggling bodies as they fought for their share.

At this stage a movement on the opposite side of the glade caught my eye and several hunting dogs shewed themselves. Immediately all the eland on that side lowered their horns, like a row of pikes, against the danger and after a few threatening rushes the dogs slunk back into the bush and the horns were raised again. The feast inside the ring continued uninterrupted.

I lay and watched the strange scene for some time. Each time the dogs approached, down came the horns, and they retreated again. While I was never able to see the victim properly, I got a glimpse of a leg which probably belonged to a youngish eland. What I assumed had happened was that the hunting dogs had pulled down and killed this eland and had then been driven off by the rest of the herd, who stood at bay round the body of their comrade. The dogs, with their usual reluctance to relinquish a prey, hung around, certainly for many hours and maybe even for a day or more (for the ground was heavily trampled in the "arena"), keeping the eland at bay. In the meantime the vultures, seeing an untouched meal awaiting disposal, had alighted on the corpse and, finding the eland fully occupied with the danger from outside, were peacefully enjoying their feast inside the protecting circle of horns. As far as I could see the eland paid no attention whatever to the vultures, which were scrabbling about right up against their hind legs! Indeed, those on my side of the ring seemed to be rather bored and even looked sleepy, but owing to the dogs having seen me, the threat was from the other side of the arena and I have no doubt that, had a dog shown itself on my side, the heads would have come down to the "ready" in quick time.

And so I left them. The dogs, cheated of their kill, watching it being eaten by the vultures, and hoping to be able to claim another victim. The vultures, protected by the horns of the eland, eating their meal undisturbed by the rightful owners, who would certainly not have left much for them. And the eland? I often wonder whether their "forming square" like Wellington's infantry was purely self-protection against threatened attack, or a fierce denial to the dogs of the prey they had snatched from the herd? It was probably both—in the first clash of battle, the charge of the herd to drive the dogs off their mate; then the fierce counter-attack of the dogs driving the eland into a protective "square" round the slain comrade.

I wonder who won in the end? My guess is that the dogs did not go empty away. They rarely do!

N.H.V.H.

## BOOK REVIEWS

**THE NTEMI.** By Hans Cory. Macmillan & Co. Shs. 2/70 in East Africa.

This admirable little book by Hans Cory, a Government Sociologist in Tanganyika, is published in the series Custom and Tradition in East Africa by MacMillan's under the aegis of the East African Literature Bureau. It deals with the traditional rites in connection with burial, enthronement and magic powers of a Sukuma Chief. Many of these customs and rites have today fallen into disuse and full credit must be given to the Literature Bureau for providing the means for the placing on record of such valuable knowledge before it is forgotten. All who are familiar with Hans Cory's earlier works will recognize the hand of the professional in the presentation and in the meticulous attention to detail which is a feature of *The Ntemi*. The book provides what has been lacking for so long, a compact and readable account of certain aspects of native life which can be easily read and assimilated by newcomers to Africa whether employed in Government service or not. In particular it should be useful to administrators and technical staff whose work brings them into contact with Sukuma Chiefs. At present the only sources of information on native life in most areas is the district book—an admirable institution, but in so many districts either incomplete, or containing information of strictly official value only. Further books of the type of Mr. Cory's *The Ntemi* would be most useful.

The detail in the eight essays into which the book is divided is based on information obtained mainly in the Busiha Chieftdom in Shinyanga district, but with the general uniformity of the Sukuma tribe it can be said that with minor differences the same rites and customs appertain to the whole of Sukumaland.

To the layman the supernatural powers which a Sukuma Chief is regarded as possessing is remarkable. As is said by the author in his concluding chapter "Usually the person of the Chief, his mode of life and his capacity for ruling, will not be criticised. Whatever he did was supposedly determined by uncontrolled forces outside the knowledge of the common people". So we find the Chief, while performing certain ceremonies during the cultivation of the crops, invoking among others Lyuba, the Sun God, and Balangai, a deity who is probably associated with the Masai.

Of more than passing interest are the Sukuma songs which are a feature of nearly all the ceremonies and ritual described. We would welcome (possibly in a separate publication) more of them, together with their tunes, as they are peculiar to ancient native life and die out quickly as civilization develops.

In the chapter on Warfare, Mr. Cory gives an interesting note on the unusual fortified villages which appeared in Sukumaland some ninety years ago as a result of warfare and, one can only presume, slave raiding. This village type earned, it may be mentioned, for the Sukuma, their nickname among the Tussi of Ruanda of "The Roofers in Mud."

The publication is on the whole so useful a contribution to local sociological literature that one is chary at cavilling at one or two minor points. The somewhat excessive use made of the vernacular terms is one of these. Although a glossary is provided, the casual reader finds it wearisome to read such sentences as: "*Ntemi, ngola* and *banangoma* assembled in the *Kihiga*, and a *ntumu* killed a black sheep....." even though the Sukuma words have been explained some pages previously. Secondly a change that might surely be made with advantage in future editions is the illustration on the external cover which consists of a head, a shield, two spears and a drum. None of these has anything to do with the Sukuma and it is perhaps a little unfortunate to print them along with a Sukuma text as it cannot help conveying the impression that the illustrations describe the people concerned.

J. E. S. G.

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**A BOOK OF EAST AFRICAN ORCHIDS.** By Frank Piers. Patwa Publications. Shs. 15/-.

At the beginning of January this year there appeared in the Nairobi book shops a small dark-green cloth-bound book in a pink paper jacket entitled "A Book of East African Orchids" by Frank Piers, M.D., its price being Shs. 15/-. It is about 6 x 8 in. in size and contains 112 pages.

It is entirely an East African production, being written in East Africa, published by the Patwa Publications and printed by the East Africa Printing Press Ltd., of Nairobi. The book has as a frontispiece a full-page photograph of *Angraecum giryamae* in its natural habitat on a tidal creek on the Kenya Coast. It is followed by a Foreword by Major H. B. Sharpe, an introduction, a contents page and a list of illustrations. The next nine pages contain a description of the orchid plant and its flower, and a bibliography. The rest of the book is divided into Part I: Angraecoids (Epiphytic Orchids); Part II: Non-angraecoid epiphytics; Part III: Terrestrial orchids; and it finishes with a final section "By the Way" and an index.

There are sixty figures, a few of which are quite good, but judging from the remainder one is forced to the conclusion that some printers in East Africa other than Government Printers have yet to learn the art of block-making for the good reproduction of photographs. Two photographs on one plate, figs. 44 and 45, have been mixed, a *Vanilla* is labelled *Polystachya* and a *Polystachya*, *Vanilla*, and fig. is upside down.

Five pages are devoted to the orchid plant and its flower, in which these are described in some detail. Two figures are given over to the structure of two kinds of orchid plants and two kinds of flower.

The bibliography is short, and amongst the few books and papers quoted reference is made to an unpublished MS, "A key to East African Orchids" (but where it can be consulted is not stated), also to the amateur pioneers of East African orchid literature, W. M. and R. E. Moreau's "A short introduction to the epiphytic orchids of East Africa" in the *Journal of the East African Natural History Society* Vol. 17 pp. 1-32 (1943).

In Part I, Angraecoids (Epiphytic Orchids), the genera are arranged alphabetically and eleven genera of this group along with their species, both named and unnamed, are described in non-technical language and their distribution given.

Part II consists of Non-Angraecoid Epiphytcs and is similarly arranged but has only six genera, the largest of these being the genus *Polystachya* of which the Moreaus' recorded 74 species for East Africa; in this the author only deals with six named along with two unnamed species, which he considers the more interesting, and these from the Kenya Highlands only.

In Part III, Terrestrial Orchids, the author deals with some species in the genera *Bonatea*, *Calanthe*, *Disa*, *Eulophia* including *Lissochilus*, *Eulophidium*, *Habenaria*, *Platycoryne* and *Satyrium*, of the more common terrestrial genera found in East Africa.

In all these parts each genus is represented by one or two figures which should help anyone who is interested but does not know much about orchids to identify the genus of an orchid when he finds one.

The chapter "By the Way" is discursive: the author points out that he has made an attempt to give the reader a general impression of the variety of the East African orchid flora and quite rightly says that the chapter on terrestrial orchids is rather incomplete. He says too that East African orchids remain in regrettable and undeserved obscurity as there are quite a number which would add interest and beauty to any orchid grower's collection and he is of the opinion that their cultivation and hybridization should be taken up by growers.

The author is indebted to Messrs. E. W. Carroll and G. R. Cunningham van Someren for twelve of the photographs of the 60 figures published, many of which, as I have said, do not do full justice to the photographs. The printing also is poor in spite of glossy paper being used. The book would have been of more value had there been keys to the genera and species but this is a defect the author will no doubt rectify should another edition be called for.

Nevertheless, to those of us in East Africa interested in the plants around us and in particular in orchids, whether growing in trees or on the ground, Frank Pier's "Book of East African Orchids" will be a very welcome addition to the very few books of a popular nature already published on the East African flora. We are indebted to a very busy medical man for his industry and enthusiasm in quite another field which he has taken up as a hobby.

P. J. G.

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**TO-MORROW'S A HOLIDAY.** By Arthur Loveridge. Robert Hale Ltd. pp. 303. Shs. 18/-.

Arthur Loveridge, of Harvard University, is an acknowledged authority perhaps one should say *the* acknowledged authority — on snakes, lizards and such-like creatures in East Africa, but this book is not a learned treatise on herpetology, but, as the blurb truthfully describes it, "a highly diverting description of the wild creatures and African tribes that the author encountered during two safaris among the mountains, plains and lakes of Tanganyika." There is more about creatures than about tribes, but that does not make the book any less diverting. It is quite unlike any other travel books relating to Tanganyika that this reviewer has read, and it can be recommended to those who are tired of the usual travelogue, but interested in the Territory and its wild life.

The author writes simply and unpretentiously, and one is, happily, spared the purple patches on scenic beauty which so often fail to convey anything but a feeling of slight embarrassment to the local reader. But his interest in his subject and his enthusiasm for it carry one with him on his arduous safaris, and one is continually entertained by the glimpses one obtains of forms of animal life that most residents in this country (I have no hesitation in saying) have never heard of, and did not know existed.

I have been across the ferry at Dar es Salaam to Mjimwema most Sundays for about five years, and have never seen a snake of any kind. Mr. Loveridge paid one visit, and this is what he saw:—

"Salimu, who was leading, suddenly halted to point at a yard-long snake beneath a thornbush. The snake at which Salimu was pointing appeared to be having quite a tussle with its quarry. The better to see what was happening, I dropped on hands and knees and crawled in under the thornbush. The branches caught at my shirt, and the ground was strewn with thorn-bearing fragments. When at last I squatted above the combatants, engaged in so desperate a struggle as to have ignored my approach, I found that both were snakes. Before seizing the big one, I was anxious to know what the smaller fellow was. This was a bit difficult, for its head was well inside the sharp-snouted snake's mouth while most of its body and tail had a good purchase in a hole down which it was striving to wriggle backwards. The two inches of its neck that were visible were black, but there are many kinds of black snakes, and should it prove to be a black-collared cobra it would be more than unpleasant to have one's eyes sprayed with venom in such cramped quarters. While these thoughts were passing through my mind I was slipping hand between some thorny twigs to seize the neck of the sharp-snouted snake. But suddenly it gaped, releasing its prey, and departed so precipitately that I failed to grab its tail—though I tried.

Promptly the prey, which I now recognized as another back-fanged species known as the white-lipped snake (*Crotaphopeltis h. hotamboeia*), disappeared down the hole. But only for a moment;

out it came again as fast as it could, its hinder portion covered with biting ants, while more of the insects swarmed behind. As I was as eager as the snake to be off, for I detest these ants, I picked up the reptile with my forceps and dropped it into a killing bottle, where it would be forever safe from cannibalistic snakes and pestilential ants."

The author collects snakes and other poisonous creatures with equal determination and skill throughout his safaris. At one time he was employed in the Tanganyika Game Department, and doubtless this accounts for the unusual degree of understanding of African mentality which his book reveals. He goes first to the Uluguru Mountains, and here he encountered a remarkable kind of tree frog, an astonishing example of adaptation.

"There, where passing elephants had bent and cracked thousands of bamboos, I was snooping about one morning when I happened to peek through a crack into a growing bamboo. I found myself looking at two patches of eggs. They were adhering to the inner surface of the bamboo. Just below them was the mother frog. Her flatness had made it possible for her to slip into the bamboo through the crack. Through the crack also had gone some of the Scotch mist or fine driving rain which was an almost daily phenomenon at this altitude. It trickled down the inside of the bamboo, irrigating the eggs as it went, and collected at the internode when it could go no further. After the eggs hatched, the tiny tadpoles wriggled and slithered down the wet bamboo until they reached this select bathing-pool, which held about an egg-cupful of water. There they swam about, feeding on the slime and algae growing on the bamboo, while their legs developed and their tails disappeared.

During these critical weeks of growth and change the little amphibians were free from attack by that host of enemies which seem to think that a defenceless tadpole is hatched only to be eaten. In their sheltered nursery the "expectation of life" was so good that twenty-eight eggs—which was what the two clumps totalled—might be relied upon to achieve the same result as the 12,000 of an American toad."

He makes similar discoveries of little-known—and even unknown—species on the rest of his trips, which take him to the Usambaras, Mpwapa, the Porotos, Mufindi, and to Lakes Tanganyika and Nyasa. His book serves to draw attention to the amazing richness of the animal life of the Territory and the scope for its further study.

It is singularly free from the kind of inaccuracies in the spelling of place-names and of Swahili which one is accustomed to find in books of this kind. *Mbuga* is written *mbugwe* (p. 168) and *Magogoni* is mis-spelled (p. 52), but these are the only errors of this kind that I noted. The author was told that the meaning of "Bagamoyo" was "Fond Heart" (p. 114): it is more probable that it is a corruption of "Bwaga moyo", "let your heart rejoice", and was used by porters of the old caravans to describe their

journey's end after a long safari up-country. The distinction between *mjusi islam* (p. 110) and *mjusi kafiri* (p. 116) is of course that between a true believer, a follower of the Prophet, and an infidel; *islam* does not mean "peace" in this context. And the reader should be warned that "Cambridge" means Cambridge, Mass. and not Cambridge on the Cam.

But these are very minor points and do not in the least detract from the general interest of the book; a book in which, besides snakes, toads, lizards, caecilians (limbless relatives of the frog), skinks, and geckos, one is introduced, in the most disarming and delightful way, to such fascinating creatures as elephant shrews, pygmy mice, black-masked tree rats, bat-eared foxes, jumping hares, and silvery-cheeked hornbills.

The book is dedicated to Salimu bin Asmani, "African naturalist", an Mbondei who has been right-handman not only to the author but to several other naturalists, and whose uncanny skill with a collecting gun is well-known to all ornithologists in Tanganyika; in fact, without Salimu's specimens many museum collections would be very much the poorer and Mr. Loveridge's safaris, as he is at pains to show, much less rewarding.

J. P. M.

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## CORRESPONDENCE

Dear Sir,

I have read with great interest Mr. Fosbrooke's reactions to my talk to the Tanganyika Society\* I will not enter into argument as to whether symbols and signs such as we used before were a form of record/writing or not, but I would like to express myself even a little on some of the points raised.

The attitude of the Chagga (double "g") for instance towards blacksmiths, "WANGANYA," was not that of ridicule and contempt as in Masailand according to Mr. Fosbrooke, but one of awe and respect. Indeed, according to Dundas (pp. 272 "Kilimanjaro and Its Peoples") blacksmiths were "not only much respected but also feared." I suppose the warring tribe reasoned as the Germans did that one could not treat the Krupps works lightly! The "Wakomakundi" (smithy) clan in the Mamba area chieftdom, Vunjo, was and still is one of the most influential clans in the country.

Nor can I agree with the argument regarding the division of labour. If the division was not organised and deliberate, men would be expected to sweep the cow-dung and women to herd the cattle in the plains, but there was no such thing. This arrangement has been fully accepted by well known anthropologists like Westermann, Bruno Malinowski, Schapera and Audrey Richards, the last being my own lecturer at the London School of Economics. To my way of thinking there is nothing superstitious about a man not taking his cows' milk or his own shamba bananas to the market for sale or a woman becoming a blacksmith. The tribe's code lays it down as to whose department each of these jobs belong, and so it remains.

In regard to the statement that "Wars retarded progress," I would not go further than argue that if it were not for the 1939-1945 war, world scientists all over would have startled us with no fewer inventions, something more potent than penicillin, something more effective for leprosy, T.B. etc., more and better amenities and conveniences for the home, the office and the factory. In fact instead of talking now about the possibilities of a trip to the moon, they would have got there! All these are part and parcel of a nation's culture and it will, I think, be admitted

that so much of it has been held up by the war and it is immaterial whether the war was caused by influences within or outside the warring group or groups.

It has now been freely accepted, I think, that wars do put a stop to cultural development because culture is essentially an art of peace—, then, your inventors in their Labs or ours on their rocks would have had the time to tap on their imaginative minds for ideas which would tell of their

\*Published at pp. 57 to 64 in *Tanganyika Notes and Records* No. 32.

past or project their future. Under an "Essential services" order in war time, so many seemingly valuable cultural aspects can be side-tracked as unessential or pastime pursuits!

Yours truly,

MAREALLE II,  
Moshi.

Dear Sir,

Whilst hunting Klipspringer on top of a hill in the Kondoa Irangi District, I have discovered what I think is a new group of rock paintings and I feel sure you will be interested to hear about it. The hill is called KWA MLULU. One takes the road from Kondoa to Kwa Mtoro as far as the turn-off to the old road to Mongoloma, proceeding along the old road for about a mile until one gets to some native shambas, and from thence it is about 15 or 20 minutes walk along a path to the top of the hill. One could also upon arrival at the turn-off ask for M'SHINDA; he is a local native and was with me when I found the paintings. His house is only a few hundred yards from the turn-off.

The paintings consist of (a) a four-legged animal very much like the silhouette on the top left-hand corner of the map published in the "Tanganyika Rock Paintings" Number of *Tanganyika Notes and Records*. It is about 8" long by about 6" high. In the sun it does not show up very well, but if one casts one's shadow upon it, it stands out well and is most clear. It is done in a dull red paint. This animal is followed by another one (b) of the same sort close behind, but only the head, neck, shoulders and front legs can be seen, and these only upon close examination, as it is very faint.

Further to the left, high up and upon the same rock, is another figure. This also is quite clear, especially if a shadow is cast upon it. Like the others it is done in dull red paint. I examined numerous other rocks in the vicinity and found a lot of indistinct red lines and smudges on nearly all of them, but they were far too faint to make anything out.

Yours faithfully,

W. H. HILTON,  
Officer I/C Preparation of Sera,  
P.O. Babati.

Dear Sir,

The inauguration of intensive development of the Southern Province, and particularly the part which it is hoped coal will play in such development, gives the following quotation some topicality. It is from the "Narrative of an Expedition to the Zambezi and its Tributaries, and of the Discovery of the Lakes Shirwa and Nyassa, 1858—1864", by David and Charles Livingstone, published in London in 1865.

In 1862 an attempt was made to ascend the Ruvuma, as an approach to Lake Nyasa, alternative to the Zambezi-Shire route. On the 21st September, 1862, the party were at a place called Michi, which the map shows to be about 100 miles inland. Here "A few pieces of coal were picked up on the sandbanks, showing that this useful mineral exists on the Ruvuma, or on some of its tributaries: the natives know that it will burn. At the lakelet Chidia, we noticed the same sandstone rock, with fossil wood on it, which we have on the Zambesi, and knew to be a sure evidence of coal beneath. We mentioned this at the time to Captain Gardner, and our finding coal now seemed a verification of what we then said; the coalfield probably extends from the Zambesi to the Ruvuma, if not beyond it."

However wide of the mark modern science may prove the geological deduction to have been, this report of the existence of coal in the Ruvuma valley reveals the keenness and wide range of the Doctor's powers of observation.

Another observation in the same chapter refers to a controversial subject which is still a very live issue today. On page 424 we read, "The destruction of all game by the advance of civilization is the only chance of getting rid of the tsetse."

The weight which may be attached to this opinion by virtue of its authorship is somewhat reduced when we read the premises on which it is based. "Our distinguished countryman, Professor Owen, recommends our attention to be directed to the genesis of the tsetse, in order to discover a means for the extirpation of this pest. We frequently inquired of the different tribes if they could help us in our inquiries, and one of the Makololo remembered that this very question was once under public discussion at Linyanti, and as usual a bet was laid that no one could tell. After a number of days had elapsed, an old man claimed the prize asserting that the tsetse laid its eggs, which were of a red colour, on the leaves of the mopane-tree. These were probably only the eggs of an insect described in the 'Missionary Travels' as depositing over its eggs a sweet gum, which is collected and eaten. Some denied that he had seen them; others affirmed that the red eggs were laid on the twigs of trees, and not on the leaves; and others insisted that the eggs were placed in the droppings of buffaloes, and these last were probably in the right."

Finally, it would appear that this ascent of Livingstone's of 156 miles up the Ruvuma, only of a month's duration, has been overlooked by the compilers of that most excellent map showing the routes of the early explorers, to be found on page 34 of the 2nd Edition of the Tanganyika Atlas. No doubt such omission will be rectified in a subsequent edition.

Yours faithfully,

H. S. FOSBROOKE,  
P.O. Box 308, Arusha.

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**Note.**—As regards coal on the Ruvuma, it is of interest to note that another almost equally famous African explorer—Joseph Thomson—was sent in 1881 by Seyyid Bargash, Sultan of Zanzibar, to investigate this report. In July of that year he set off from Mikindani with seventy porters and with Livingstone's servant Chuma as guide, and located the site of the previous finds near Mount Makanje. But there was no real coal, only "bituminous shale which would burn in a wood fire but not by itself and a small amount of a substance like anthracite that would scarcely burn at all." Bargash was so disappointed at this report that at first he refused to believe it. It will be remembered, however, that Thomson was a trained geologist. See pp. 367-8 of Coupland's *Exploitation of East Africa*.—Ed.

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Dear Sir,

Reading in the *Uganda Journal* (September, 1951) about "The first Finding of a Live Pigmy Crocodile in Uganda," by E. A. Temple Perkins, reminded me of the article on "The Crocodiles of Tanganyika Territory," by A. Loveridge, in *Tanganyika Notes and Records*, No. 10, December 1940. It may be of interest in connexion with these two articles to recall that the late Curator of the Berlin Museum, P. Matschie, had already made in 1895 a map of the Fauna of Africa, which showed that the Guinea—Congo species were to be found in Lake Tanganyika and Lake Victoria.

Yours faithfully,

(Sgd.) W. JOERGENS,  
Mararui Estate, P.O. Box 1051,  
Nairobi.

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Dear Sir,

This letter has to do with a book of mine entitled "The Parasitic Cuckoos of Africa," published in January of 1949 by the Washington Academy of Sciences.

In the South African bird journal, *The Bokmakierie*, for December 1951, Mr. C. J. Skead, Director of the Kaffrarian Museum, King William's Town, Cape Province, has announced that in order to offset the unfavourable international monetary exchange, and to enable potential users of the book to be able to get it for a more reasonable price, the Washington Academy of Sciences has agreed to the following suggestion. If all orders from individuals in Africa be sent to the author, Dr. Herbert Friedmann, Smithsonian Institution, and not the Academy, they will be given the benefit of the author's discount, which will bring the price of the book, including postage, to \$3.80 (or £1 ls. 6d.) instead of the regular price of \$4.50 (£1 13s. 6d.) The reason for handling it in this way is that it does away with the publishing agency, the Washington Academy of Sciences, having

two prices for the book; all orders received through the author are treated as author's orders and are thus given the benefit of the discount. The books will be sold by the Academy to the author who will send them to the purchasers. It should be stated that neither the author nor the publisher makes any profit on the book.

Please make out postal money orders or bank drafts to Dr. Herbert Friedmann, not to the Academy.

Because of the response from bird watchers in South Africa and Rhodesia, I have been encouraged to think that there might well be individuals in the British territories in East Africa who might also be interested in acquiring this book. I would be glad to give prompt attention to any orders that might come in from any of their readers.

It is my idea in placing the book in the hands of people in the field that the information it contains may be added to or corrected as need be, and it is my hope that it may help to stimulate observations to the point where a great deal of information may be forthcoming.

I am, Sincerely yours,

HERBERT FRIEDMANN,  
Curator, Division of Birds, Smithsonian Institution,  
Washington, D.C., U.S.A.

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Dear Sir,

I have only just seen Mr. Hatchell's letter on page 71 of Vol. 24, December 1947 of *Tanganyika Notes and Records* wherein he asks for information on the custom of applying pigeons to the feet of sick people. The following extracts have a bearing on the matter. "In Northampton no one, it is believed can die on pigeons feathers (p. 15) . . . In Northlincolnshire, if a pigeon is seen sitting on a tree, or comes into the house, or from being wild suddenly becomes tame, it is a sign of death (p. 51) . . . Jeremy Taylor, ed. *Heber*. Vol. XII. p. 290. "We cut living pigeons in halves, and apply them to the feet of men in fevers." *Choice Notes from Notes and Queries*. London 1859.

Yours truly,

M. D. W. JEFFREYS,  
Senior Lecturer, Social Anthropology,  
University of the Witwatersrand,  
Johannesburg, South Africa.

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Dear Sir,

On page 86. of *Tanganyika Notes and Records* No. 32, there are two printing errors of considerable importance as they affect Zoological nomen-

clature, and I would be glad if you would publish corrigenda in the next number. The errors are as follows:—

Page 86, line 7: for *Frigate minor*  
read *Fregata minor*

Page 86, line 17: for *Frigate minor aldabrensis*  
read *Fregata minor aldabrensis*

Yours faithfully,

A. F. MORRISON,

P.O. Box 473, Dar es Salaam.

Dear Sir,

Thank you very much for publishing my letter on the subject of the coinage of German East Africa (Tanganyika) by P. J. du Toit which appeared in the issue of *Tanganyika Notes and Records* for January, 1952, No. 32. Since writing the above letter, I have been able to collect more coins of the descriptions appended below:—

*Coins issued by the Deutsch-Ostafrikanische Gesellschaft.*

- (1) One Rupee.—Silver. Obverse, Kaiser Wilhelm II with helmet and eagle and the inscription "Gulielmus II Imperator." Reverse, Coat of Arms with palm and lion etc. of 1900.
- (2) One-half Rupee.—Similar to above with dates 1897, 1901.
- (3) One-fourth Rupee.—Similar to above in (1) date 1901.
- (4) Pesa.—Bronze.—Obverse, German coat of arms with inscription "Deutsch-Ostafrikanische Gesellschaft" Reverse, inscription in Arabic in wreath—1891 and 1892.

I obtained a second "Tabora Sovereign" in July, 1952. Now I possess two. When comparing them—A. obtained in 1944. B. obtained in July 1952. —I find the following differences:

"A" is brighter than "B"

"A" is heavier in weight than "B"

*Coat of Arms side of "A".* The tongue of the eagle in "A" is protruding more than that of one in "B". There are other slight differences clearly noticeable on both.

It is said that when the 1914-18 war was in its last stage, there was an acute shortage of supply of any metal for minting coins and that the paper supply for printing notes was also exhausted. In order to maintain the flow, some leather currency was introduced. It is maintained that the currency was of one rupee. It cannot be said what it looked like, but it did exist, says the informant, and is of great value to collectors. Has anybody any knowledge or evidence to substantiate the above statement?

Yours faithfully,

D. M. PHATAK,

c/o Revenue Office,

Tabora.









