

TANGANYIKA NOTES AND RECORDS

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The African and how to promote his Welfare

By Petro Ch. Mntambo

1.—EARLY HISTORY OF THE AFRICAN

LONG, LONG AGO, the African knew nothing of the outside world, he had been always fast asleep. Our ancestors lived at the mercy of their weapons, whether for attacks on the wild animal side or for their living, so far as they had no knowledge of how to procure the essential necessities of life; but only that of hunting game for their food and clothing, as they used skins and bark cloth; when they missed game they used certain kinds of tuberous roots and honey for their food. As the proverb says, "Necessity is the mother of invention", so it can be proved through the changes undergone by the African for life's sake.

As time passed on, and years passed by, the African experienced so much adversity that he had to seek for a way out of his troubles. He experienced that the wild game was being exterminated, the tuberous roots were being exhausted, so he learnt cultivation. From prehistoric times the African knew how to make weapons of wood and stone, so by this time he made wooden hoes and tilled the soil and planted some of the trees that they found growing wild and give them fruits and tuberous roots; in course of years when the Persians, Arabs and finally the Europeans came to this country they brought them better seeds of corn, lentils, peas, melons, castor oil, banana, tobacco, sweet potato, sugar cane, manioc and fruit trees, also they brought them oxen, goats, pigs and domestic fowls; to the above list of the things brought to Africa by our immigrants we must add the following diseases: syphilis, influenza, tuberculosis and many other diseases and also made possible the spread of others. He then succeeded in getting enough crops and by this time, in order to make a strong band, they combined together to make villages and had their fields chosen in common, in one place. So they were now united and were keeping together for the well-being and improvement of their nation. After all knew how to keep tamed animals, petty wars were frequent, one tribe would go to war with another for the sake of devastating the weaker tribe's wealth. Through such wars, people chose their chief leader, by pointing out who was bravest in war; and one weaker tribe could join with another to make one strong kingdom for its protection. Through this line we find the line of kingdoms in Africa, such as Mkwawa, Mangungo, Mhela Mwana, Chaka, Dingaan, Khama, etc.

The African clothed himself in skins as well as in a soft kind of bark cloth made out of the bark of some kind of trees (i.e. Myombo and Mbuyu=*Brachystegia isoberlinia* and *Adansonia digitata*—Baobab, which produce ropes and

good strong barks). When the white man came, the native changed his mode of life and adopted more or less that of the white man.

The African has paid, and is still paying, with his tears and blood for the prosperity of the white man, and to prosper himself he has to pay with his blood, tears and life in order to reach that ever-receding horizon of success, which always draws him forward with an unabated enthusiasm.

Since time immemorial, the African has been up and doing, heart within and God overhead, and if only the world will not desist, such progress and success is sure to be reached in an easy, straight-forward way.

2.—PAST PROGRESS

When the white man came into this country he had three aims in view, the first was to stop the slave-trade, which has now been absolutely eliminated; the second was to bring Christianity to the African heathen; and the third was commerce. These were the three aims which fired him to risk his life in exploiting the Continent of Africa.

His first aim, that of eradicating the slave-trade, has been accomplished, and the African greatly thanks him. His second aim, that of Christianizing the African, is still in progress. When he came into Africa, he knew that he could not teach the African the Christian religion without teaching him how to read and write, so he opened schools, and after arduous labours of teaching the African, he turned out good teachers and religious ministers to help him carrying on his duties of christianizing and educating the African. His third aim, that of commerce, followed suit on the second, for wherever Christianity was carried, commerce followed, as mostly the education taught to Africans was cleanliness for good health, to eat good and well-cooked foods, clean pure water, good clothing, good clean houses, etc., for "Cleanliness is next to godliness". Therefore the African was taught to be clean in body and soul. Here then, the third aim had to be adopted, for the African had to get cotton clothes, which are easier to keep clean than his skin and bark cloths; he had also to get iron and glass vessels, which are easier to keep clean than his wooden and earthen utensils; also he has to get sharp tools for the easy discharge of his home duties, and sharp weapons for his protection.

The education of the African was in two ways; first, those who were young to enter school and be taught religion and other secular subjects for their future home life; second, those who were old enough to work as servants and labourers in the farms and houses of missionaries, traders and plantation owners, wherein while they worked they learned something new, which knowledge they carried with them to their homes long after and imitated. When the white man found that he had a foothold in planting Christian religion and commerce in Africa, he visualized that his success in all he was doing depended chiefly in his home government; so he persuaded his home government to negotiate with the

African chiefs and kings, after which negotiations, the British Government extended its powers into Africa. The road to Africa having been paved by Government, many Europeans came into Africa as government officers, more tradesmen followed, and more missionaries came, with two aims at this time, one that of educating the African and fitting Africa into the civilized world, the other was that of earning their living. "God made man good, but Satan corrupted him." Therefore we find two sides in conflict with each other, that of the good European, who is eager and always helping the African to come to the same line of civilization as the other advanced nations are; and that of the bad and greedy European, who is anxious and refuses to help the African to come up, lest they be equal or he loses his post and dignity and sent back home when the African has become able to govern and discharge proficiently all the duties concerning the administration of his country, as history relates itself. For where are the old kingdoms or empires of Faraoh, Alexander the Great and finally that recent one of the Romans? They have all crumbled into pieces and all those whom they governed have obtained good and lasting knowledge of how to govern themselves. But as for Africa, it will not materialize the same, for the British Government did not get Africa as a booty of war. But through negotiations and the consent of the African himself, British administration has obtained a lasting friendship and a permanent home if he desires and if only he eradicates the embarrassments that he presents to the African daily. Taking for granted I deem it convenient to quote the following from Article 22 of the Covenant of the League of Nations, here it runs :

"To those colonies and territories which as a consequence of the late war have ceased to be under the sovereignty of the States which formerly governed them and which are inhabited by people not yet able to stand by themselves under the strenuous conditions of the modern world, there should be applied the principle that the well being and development of such peoples form a sacred trust of civilization and that securities for the performance of this trust should be embodied in this Covenant.

The best method of giving practical effect to this principle is that the tutelage of such people should be entrusted to advanced nations who by reason of their resources, their experience or their geographical position can best undertake this responsibility, and who are willing to accept it, and that this tutelage should be exercised by them as Mandatories on behalf of the League."

I presume this would be a good aim, if the British Government should take the idea and activity of educating the African how to stand by himself. Probably some will ask, "What will happen if the African is able to stand by himself?" The answer here would then be, equality in action and activities, and harmony would prevail when we esteemed and counted one another as one nation discharging our duties for the well-being of Africa. Africa forms a sacred trust to the British Empire, and when the African has been raised from

the mire and bogs of ignorance, he will only be too glad to live in harmony with his tutors for evermore enjoying the fruits of their efforts rather than forsake them.

Progress has so far been maintained in furthering firm foundations of Christianity, education, commerce and administration until to-day we find the African in all fields of activities, such as a teacher in schools, in medicines, as a doctor, in offices, as a clerk, interpreter, accountant, etc., and in administration as a chief and leader of government to his own countrymen.

3.—PRESENT PROGRESS

There are to-day in Africa so many schools belonging both to Government and Missions, training Africans in different professional and technical jobs. Most Africans start their education in the bush-schools (known as "village" or "out-schools") from which, if successful, they are sent to central schools. Passing from the central schools they go to colleges after which if successful enough, and with sufficient means, they go to universities. From these different categories of schools we get different people of different standards of education, who either join Government or Missions for different kinds of jobs so as to get the means with which to provide themselves with the essential needs that modern civilization and education invites them to participate.

From such people we get doctors, teachers, lawyers, clerks, administrators, tradesmen, carpenters, masons, and of so many other professional and technical branches, such as religious ministers and engineers. All these are fighting for that better life taught to them in school, and also carrying the little knowledge they have got to their own countrymen. These people have got arduous double duties to discharge, the first is the actual work of their vocation which they do either in the Government or Missions; and the second is the social philanthropic duties they discharge among their own countrymen after office hours. This social job is done by many in different ways, such as in social clubs, libraries, night schools, commercial and business conversations; the African imparts his knowledge to his fellow-countrymen through conversation and palavers, as thereby each individual learns from his friends some knowledge on different subjects.

The thirst for more education has fired many Africans and there are some to-day who, although they received very little education in their time, yet they are anxious to get all the best and higher education in higher branches of sciences for their children so that their off-spring may start life on a higher footing, hence the anxieties and difficulties experienced by many advanced Africans in sending their children to higher schools and universities. You will find also many advanced Africans to-day who take private correspondence courses in different subjects for their own improvement.

As every African has got his own ambition in the improvement of his country, you will find some who are eager in commerce who have opened their

own little shops or are doing their own business as carpenters, masons, contractors, etc., in their own workshops, also you will find some who are farmers in a larger scale than the short-sighted African who lives from hand-to-mouth. They are all eager and hastening in the feverish race, all straining life and limb and heart and soul to reach that ever-receding horizon of success. Never-ending is the wild procession in Africa for a better standard of life. It makes them all mad to think of their present situation, and so exhilarates them to push forward so that each to-morrow may find them a step further on the high road to success.

Education is becoming higher in Africa to-day, and many Africans are trying to lead a life more or less like that of the white man. Good permanent roads and railways have been constructed for easy communication. The African has adopted the English language and dress, also he tries to use European goods whenever possible, which things draw much from his scanty income, but as he has already tasted the sweeter side of life and left his primitive world marching to that civilized one, he endures all obstacles knowing that food comes of labour and good sleep after hard exercise. So he painfully draws from his scanty income to match his life with that of the more civilized nations, knowing that time will come when he can participate freely and happily without obstacles or difficulties. There are two things greater than strength that will carry one far, and these are perseverance and endurance.

4.—HINDRANCES

There are several hindrances, but to give the whole thing briefly: there is the greedy African who is against African progress; he loathes to see his fellow-African on a higher standard of life, not knowing that the advancement and well-being of even one African would bring pride to the rest of the African community. On the reverse there is also that well-educated and well-to-do African who loathes and hates to co-operate or sit together with the lower or uneducated majority, for he counts them as of inferior quality and kind; not knowing that his co-operation with this group would help to educate them in methods of modern life conditions. He does not like to help his fellow-Africans to come up lest they be equal. So he would rather be alone on the higher positions and despise his fellow-Africans because they are backward people and it will take them a long time to come up; he does not know that he condemns himself for being an African. If we are to improve and progress we must help each other to come into one line, not be satisfied that one is higher than the other group of Africans. Most of such a hindrance is attributed to ignorance. Although the African has so far been advanced in education yet he has not cast off his old garment of ignorance, and so it prevents or delays him in achieving that real unity which would ensure a prompt advance on the high road to success. If he achieved that real unselfish unity, he would rest satisfied that he had paved the road to success.

Meanwhile, there is the white man who employs the African on a very small salary, as a bare subsistence for his life. How could you, after all this education you have given to the African, deprive the African of a sufficient income for his living. It is very heavy burden you present to him, not even counting on the labours he renders for your prosperity and welfare, such as the wars of the white man which involve the African and in which so many have perished, without any profit whatsoever on their side and, of course, without complaint. Does not this show you that he counts you as his benefactor and patron, that you will grant to him all the privileges of a father to a son? Can you teach your child how to suckle and then deprive him of your breasts? Please when you teach him the better side of life give him also the means and ways by which he can live that better life.

Moreover, there are so many repeated aims for the good and welfare of the African which have never been put into practice. How can the African believe if you give him mere words only? A motto is no good if it is an ornament on the wall. If we live up to it then only does it become worthwhile. The African is never consulted on matters affecting his welfare and country. He is not admitted to the Legislative Council, only that you may probably find him appointed in few minor boards; and above all this, the laws and ordinances of the country are passed in English and never interpreted to the African. They belong to confidential official documents, and when an African commits anything contrary to these laws and ordinances he is imprisoned. It would be better if these laws and ordinances should be translated into the language of the country, or, on the other hand, if educated Africans were appointed to undertake the administration of their country, so as to be able to translate these laws and ordinances to their fellow-countrymen.

It would bring a mutual benefit if the white man lived up to his motto, that of sacred trusteeship and a tutor of a backward race, and that the interests of the natives must be paramount. Without adhering to his aims and mottoes, the African counts him a flatterer, sly and a hypocrite, because he does the reverse of what he says. So this hinders the progress of the African to-day, he is, as Mr. Culwick says in his "Good out of Africa",* page 8, "living between two worlds, . . . he is not fully at home in either", and on page 21, "A more sanguine Christian view of human nature would be of inestimable value, opening to the Bantu peoples a line of development in the sphere of religion fulfilling and not destroying their past".

You should not treat the African as an empty headed block to be filled with new sciences and ideas, but as a man with his own sciences and ideas of life and development to which you have only to add your own. Bishop Steere's *Words of Strength and Wisdom* says, "New roads may be made, but they lead to the old places". So you must always keep in mind that whatever you put into the African, you are making a new road to the same African of Africa

*Rhodes-Livingstone Papers, No. 8, 1942.

of a thousand years ago. So do not destroy what you have found in Africa and replace it with your own, you would give the African no footing ground. What you have met in Africa is a sacred heritage handed down from father to son as the years pass by. Better still construct your new sciences on the African foundations, if ever a real permanent success and civilization is to be achieved for the welfare of the African and Africa.

5.—FUTURE PROGRESS

The future progress of the African depends solely on the land. Perhaps I cannot define it better than the legend that a father lying dying in bed summoned his children to come and listen to his last parting words, and he said, "My sons, I am now bidding you good-bye, crossing the great divide, heading for the unknown; I leave you no cash inheritance, but on our farm is buried a very great treasure to provide you all with all your needs, if but only you go and dig" So the man passed away without saying where the treasure was buried in his farm. This was a sore trial to his sons, and left penniless, they had no alternative but to go and dig up all the farm in search of their father's treasure; so they did, but nowhere in the farm could they find a ready hidden treasure, so they gave up at last, but when it rained, and jealous of their well-tilled farm in search of their father's treasure, they planted it with corn which in harvest time yielded abundantly and they became rich in this way. Seeing what had happened they understood what their father meant on his dying bed when he told them of his hidden treasure in his farm.

If really the future progress of the African must be achieved nobody need hesitate to look for a new or better way; but only to return to the old nurse of mankind, the "soil". When our immigrants came, they found us with our old nurse "soil" quite undeveloped, but yielding all that the African desired. When these people came they brought us their sharp tools and weapons and their new entangled, intrincating sciences, and without instructing the African how to use them, they let him off with them. Ignorant as he was, he went in pursuit of jungles and bushes for new larger farms without knowing that he was turning his own country into a desert; as his home is not a permanent one, that African moved from place to place destroying and upsetting everything on his trail, and, being helped by the ravages of mother nature, he has turned many a place into a desert, which if immediate steps will not be taken, those places must deteriorate and finally pass into proper deserts.

Everyone who is keen and eager for the progress of the African must not give any sort of tool to an African before he has properly instructed him on its use. Does one give a knife to a baby? No! Because he should not cut himself. So you gave this African child a knife; he has now cut himself, and you are now wondering what to do to cure his wounds. There is no other way but to turn to mother soil for the cure. Turn all your a hundred and one different science colleges into agricultural colleges. Teach the African the

proper science of farming and you will do a good stroke of job before you retire from the field of activities. Convert and make all your lower and higher schools into agricultural schools. Teach the African the real scientific farming method. By farming I do not mean tilling the soil only, this has not been the only work of the African, but teach him the good way of tilling the soil, keeping fowls, keeping cattle, sheep, goats, donkeys, pigs and other animals which would thrive in his part of the world.

Give to the African all the education he requires in the kindergarten school, and from the beginning do not exclude the science of farming as it is his by inheritance. Teach him the best method of cultivation and how to grow different kinds of crops and vegetables, also how to keep different animals in his farm. In this campaign four departments must combine together and fight for one effort: that of making the African a better and happier gentleman. The four departments which must combine together their activities and work together in common are the Water, Education, Veterinary and Agricultural departments.

The duties of the Education Department will be to train the African in languages, discipline, manners and secular sciences as geography, mathematics, etc. At the same time the Veterinary Department should also take steps in teaching him how to keep fowls, ducks, cows, goats, sheep, donkeys, pigs and other animals liable to flourish in Africa; while the Agricultural Department at the same moment should take steps in teaching him the best method of cultivation, such as crop rotation, vegetables and fruit growing, the methods and ways suited for growing economic plants. If such a course is started from the beginning a child enters school, he may have something firm to fall back upon if he fails in his vocational course, that when he gives up and goes home he knows the best methods of live stock keeping and cultivation.

For the present education, the African has been receiving secular sciences only—theoretically without demonstrations—and whenever he failed in his vocational course which he chose, there is no alternative but to drift aimlessly seeking any sort of job to help him to obtain his living. But had he been trained in the way I have suggested, few would seek work in Government or Missions, as everybody, knowing what opportunity awaits for him in digging up the treasures hidden, would rather try his fortune in starting a farm and make that farm the end of his dreams, making it his sole home, living all his life there, cultivating and planting rice, maize, millet, potatoes, cassava, beans, vegetables and fruit trees; and at the same time rearing cows, goats, sheep, pigs, donkeys, and also keeping fowls and ducks. This is the work of the African from time immemorial, and you need only instruct him so as to improve his old methods into modern ones to fit him in the modern world. Make your schools a demonstration for even adults to learn something when visiting the school. The science you teach in school is only theoretical, so something demonstrative outside the school is most essential.

On the whole, the African must be given an all-round education in agriculture and veterinary sciences, also a little of the other arts of carpentry, medicine and health, rough science of how to plan and build a house, etc., these would fit him for his future life when he leaves school and start his own independent life when his family will be looking upon him as the only one provider of all their essential needs at home.

The education given to the African to-day is not bad or low so far, but it must be changed or reformed so as to meet with the present requirements of the African. The Government has been teaching the African to become a teacher, medical-man, clerk, etc., so that he may help him in administrative duties; and so has the African responded to this call unhesitatingly. But in such employment he has been and is being paid very little. He has always been started with Shs. 30/- per mensem if not less; and if he has got a better education, from this salary he rises by annual increments to Shs. 130/- per mensem at which goal he might have finished fifteen or more years, and he must be tired, needing a rest for his advanced age. When he leaves his job at this time he is given a little gratuity or his provident fund, which money he soon squanders, and spends his aged years in want and anxiety. Whereas had the fundamental principles of farming been planted in his brain, he would, during his official duties, have chosen a place, built his house and made his farm to prepare himself for his future ex-official service life. You have actually taught him how to spend, but not how to save money. You have educated him or rather Europeanized him, that is, you have taught him your language and how to dress, eat and live like a European and without counting how much this would cost him, or avoiding equality, you give him lower pay so that he may not rise from the mire. After all the education you have given him, of how to eat good foods, dress in clean clothes, live in good houses, and so on, I am afraid he can never retreat as he has already partaken of that sweeter side of life, although it painfully draws much from his scanty and meagre resources. He must struggle to see himself through to that civilized and better world for which he is now painfully groping his way through. Can you give him a helping hand? Please do, if you can.

If really the Government is to do a good turn it had better start with an installation of an agricultural demonstration farm in each province of the Territory and at the same time start farmer's co-operative unions in every district, encouraged and supervised, of course, by the heads of the provincial demonstration farms.

6.—THE AFRICAN AT HOME

If the development I have advocated were to be followed and achieved, the African would then arrive at a better, dignified, happy home. Everybody knows that the wealth of the African is the land from which the African has been obtaining his needs; for the African is a farmer by nature, therefore only

instructions on how to use the new tools of agriculture and the new methods of farming are needed, and once that spark has been kindled, then the African can march as before, but with greater confidence on a higher ground. He would be deriving much more income by selling his produce than he has hitherto in former years before he received the new ways and methods of farming and therefore, if he received a large income by following the new methods of farming, he would then enrich the white man by buying more of his goods than he has hitherto been able to buy, and paying his taxes easily, also more money would be retained and stabilized in the Territory, than the present methods of depending on overseas markets with the high charges of customs duties. There is a great treasure of the untapped resources of agriculture in this country, and this is the only one hindrance which keeps the African back and brings about his complaint, that you have tended to teach him European ways of life rather than adhering to his old occupation of life. If taught the best methods of farming, the African would adhere to the land and establish his life as he lived before the coming of the white man rather than squatting in towns working as a servant and bullied by the richer folks; and, on modern methods of farming and living, he would prosper beyond measure, and dissatisfaction and unrest would be eliminated when he lived happily at his farm getting all that the world can offer him through the income of his farm.

Stanley versus Tippoo Tib

By J. M. Gray

READERS of Stanley's *In Darkest Africa* will remember that in the concluding pages of the second volume he refers to the fact that, just before his departure from Zanzibar on his return to Europe, he instituted legal proceedings against the slave trader Tippoo Tib for the sins of omission and commission which are enumerated at considerable length in the first volume of the same work. Hitherto a certain amount of mystery has surrounded the ending of that action. It is generally known that the case was withdrawn, but the reasons for its withdrawal have hitherto been matters for conjecture. In actual fact the record of the proceedings is still extant and, coupled with certain information from other sources, throws considerable light not only on the reasons for withdrawal of the action but also on certain events described by Stanley in the first volume of *In Darkest Africa*.

Of the two men Henry Morton Stanley needs no introduction. He was a self-made man who, despite the greatest possible handicaps in early life, made his way to the fore and came to be known as a great explorer. His part in the shaping of the destinies of Uganda and the Congo Free State is too well known to need repeating here.

Tippoo Tib is not so well known, though his name is to be found in almost every travel book about East and Central Africa from the days of David Livingstone until the day when the German flag was hoisted over what is now Tanganyika Territory. Stanley's estimate of the man is to be found in two of his works, *Through the Dark Continent* and *In Darkest Africa*.

Tippoo's real name was Hamed bin Mohamed el Marjebi. Like Stanley, he was a self-made man. His father was an Arab of Omani origin but his mother was an African from the Tanganyika coast. His features were distinctly negroid but he always called himself, and was always treated by others, as an Arab. He was born in Zanzibar. Before he was out of his 'teens he started in business on the East African mainland as a slave and ivory trader. One cannot possibly attempt to hold any brief for his calling but it is only right to say of him that all the Europeans with whom he came in contact, including David Livingstone and a number of missionaries, realized that in following his calling he lived up to a higher moral code and showed a higher standard of humanity than the great majority of Arab and African slave dealers. His hands were certainly not clean but it was probably the fact that he did aspire to a somewhat higher standard of commercial morality than others of his kind which provides the clue to his successful career. During the 'eighties of the last century he was virtually the uncrowned king of all the land lying between the western shores of Lake Tanganyika and the banks of the upper reaches of

the Congo. So great was his influence in this territory that after the founding of the Congo Free State, Leopold II felt compelled to make what was virtually a treaty with Tippoo Tib.

Tippoo Tib's latter days were less prosperous. He did not die in absolute penury but he lost a great deal of his wealth and almost the whole of his influence. When he died a few English newspapers took note of the fact. Their references to his career were exceedingly brief and they one and all described him as "the notorious slave dealer". Stanley had died a year before. Almost every English and American newspaper gave him a full-length obituary notice. Not all those notices were entirely eulogistic but they one and all acknowledged him to be "the great explorer".

As the quarrel between Stanley and Tippoo arose out of an agreement concluded between them during the course of the Emin Pasha Relief Expedition, it is perhaps desirable to give a brief account of that expedition. At the time of the Mahdi's revolt Emin Pasha was Governor of the Egyptian Equatorial Province of the Sudan. When Gordon was killed and Khartoum fell, Emin and his garrison were completely cut off from the outside world. Anxious for their safety, a number of prominent men in England raised a fund to equip an expedition to go to the relief of the isolated garrison. Stanley was selected as a leader of that expedition. For reasons, which need not be discussed here, it was decided that the best line of approach to Emin Pasha was by way of the West Coast of Africa, up the Congo and its tributary, the Aruwimi, and thence across country to the shores of Lake Albert. As porters were believed to be unobtainable on the West Coast, it was decided to recruit six hundred porters in Zanzibar and to transport them via the Cape to the mouth of the Congo on board the s.s. *Madura*, which was specially chartered for the purpose.

In pursuance of these arrangements Stanley landed at Zanzibar on the 22nd February 1887. The *Madura* was there and the six hundred porters had already been recruited by the well-known firm of Smith, Mackenzie & Co. As soon therefore as they and the necessary stores had been embarked the expedition could set forth on its journey. The *Madura* actually weighed anchor and sailed at daybreak on the 25th February. During those three days Stanley had had a very busy time. He had left the loading of the vessel to his European officers but, to use his own words, he had "several little commissions" to do during his stay in Zanzibar.⁽¹⁾ Two of those commissions concerned Tippoo Tib who happened recently to have returned to Zanzibar from the Congo. The first of these was undertaken on behalf of Leopold II of the Belgians and resulted in the drawing up of an agreement between Stanley, on behalf of Leopold II, and Tippoo Tib, whereby a *modus vivendi* was arranged between the Congo Free State and the uncrowned king of the Upper Congo.

⁽¹⁾ *In Darkest Africa*, I, 68.

This agreement does not particularly concern us. It was arranged largely through the mediation of Mr. Hohnwood, Acting British Consul-General at Zanzibar, who later informed the Foreign Secretary, Lord Salisbury, that it was only reached "after a prolonged discussion" and "a very forcible exposition" by Mr. Stanley.⁽²⁾ Regarding the second agreement Tippoo Tib complained at a later date that he had "been hurried up by Holmwood".⁽³⁾ Be that as it may be, Stanley's own account in *In Darkest Africa* shows negotiations that "a good deal of bargaining" took place and that the agreement was not finally signed until a very few hours before the s.s. *Madura* sailed from Zanzibar.⁽⁴⁾

The object of this second agreement was to obtain from Tippoo the services of an additional six hundred Manyema porters when the expedition reached the upper reaches of the Congo. It was believed that Emin Pasha had large stocks of ivory in Equatoria and it was hoped that by means of these porters it would be possible to bring that ivory down to the coast and thus defray part of the cost of the expedition. Tippoo was the obvious person to supply these porters and he was eventually persuaded to sign a contract undertaking to do so. Tippoo proposed to make his way to the Congo by his usual route, travelling overland from Bagamoyo to Ujiji and thence across Lake Tanganyika.⁽⁵⁾ But Stanley would have none of this. Tippoo must sail with him on board the *Madura*. The agreement was not signed until the 24th February. Then, to quote Stanley, "by midnight Tippoo Tib and his people, and every person connected with the expedition, was on board and at daybreak the next day, the 25th February, the anchor was lifted and we steamed away".⁽⁶⁾ It was all very quick work. Tippoo Tib's retinue comprised ninety-seven souls, male and female, and their packing must have been somewhat hurried. Tippoo Tib's own immediate reaction to the whole affair is described by Surgeon Parke, the medical officer of the expedition. In his journal for the first day at sea this officer records the fact that "Tippoo Tib and twelve of his wives were seasick, and I prescribed Eno for each".⁽⁷⁾

In due course the expedition reached the west coast of Africa and sailed up the Congo. Eventually the expedition divided into two parties. One under the command of Stanley proceeded one hundred miles up the Aruwimi, a tributary of the Congo, to a place called Yambuya. The other, which included Tippoo Tib and his retinue, proceeded up the main stream of the Congo to Stanley Falls, which was to be Tippoo's seat of government. It was arranged

(2) *Africa*, No. 8 (1888), p. 22.

(3) Barttelot, p. 239.

(4) *In Darkest Africa*, I, 63.

(5) Swann, p. 174, and cf. also paragraph 4 of Tippoo Tib's written defence to Stanley's claim: "The defendant intended to proceed to the Congo overland and offered to meet the expedition at Stanley Falls in about four months, the time taken by the expedition in reaching that district."

(6) *In Darkest Africa*, I, 66.

(7) Parke, p. 20.

that Tippoo should muster the Manyema porters at Stanley Falls and send them to join the main body on the banks of the Aruwimi.

As Emin Pasha was believed to be in very real danger, Stanley arranged to go forward with a relatively small advance party, leaving the rear party at Yambuya in charge of his second in command, Major Barttelot, to wait for the porters from Tippoo Tib and then to come on with the bulk of the expedition's stores.

In due course Stanley made contact with Emin at the southern end of Lake Albert. Then, as he had heard nothing for several months about the rear party, he decided to retrace his steps and look for them. He eventually found the remnants of the party at Banalya on the Aruwimi in charge of William Bonny, the sole surviving European. He learnt that there had been a long delay before sufficient porters were supplied, that during that delay many of the Zanzibar porters had died, that, after the porters had eventually been supplied by Tippoo Tib, the rear party had started to follow in Stanley's tracks, that after a few days' march Major Barttelot had been shot dead by one of the porters and thereafter most of the men had stampeded, leaving Bonny and the remainder of the party absolutely stranded. The rest of the story has been told at considerable length by Stanley in *In Darkest Africa*. He once more made his way to the southern end of Lake Albert, again made contact with Emin, and eventually proceeded through what is now Tanganyika Territory to Bagamoyo and thence by sea to Zanzibar.

A passage from Stanley's *In Darkest Africa* shows what subsequently transpired at Zanzibar :

"Among my visitors at Zanzibar was a Mohammedan East Indian, named Jaffer Tarya, who is a wealthy Bombay merchant, and acts as agent for many Arab and Zanzibari caravan owners in Africa. Among others he acts as agent for Hamed bin Mohammed *alias* Tippoo Tib. He told me that he held the sum of £10,600 in gold, which was paid to him for and on behalf of Tippoo Tib by the Government of the Congo Free State for ivory purchased by Lieutenant Becker from Tippoo Tib in its name. Jaffer Tarya had thus unwittingly put the means to enable me to bring Tippoo Tib some day before the Consular Court at Zanzibar to be judged for alleged offences committed against British subjects, the gentlemen of the Emin Pasha Relief Committee, and to refund certain expenses which had been incurred by the declaration he had made before Acting Consul-General Holmwood, that he would assist the Emin Pasha Relief Expedition with carriers There is not a doubt, then, that if strict justice be dealt to this arch-offender, the Emin Relief Committee may find itself in possession of funds to pay each Zanzibari survivor a bonus of 300 rupees, and each of our officers a sum of £1,000 in cash, a consummation devoutly to be wished." (*)

(*) *In Darkest Africa*, II, 428-29.

No doubt Stanley would have been very surprised indeed, not to say indignant, if he had been told that, were strict justice to be done in the case, he should have been called upon to show cause why he should not be punished for a contempt of court.^(*) When Stanley published this passage to the whole world, the action was still pending and English courts of justice regard the publication of any matter tending to prejudice a fair trial as a serious offence. Stanley was, however, outside the jurisdiction of the Consular Court when these words appeared in print. He arrived at Zanzibar on the 16th December 1889, and sailed thence for Egypt a fortnight later. Once more he maintained his reputation for hustling, but on this occasion he was not able to achieve all that he had set out to do during his stay at Zanzibar. He appears to have obtained his information from Jaffer Tarya within a day or so of his arrival in Zanzibar. On the 19th December, Messrs. Smith, Mackenzie & Co., at Stanley's instance and as local agents of the Emin Pasha Relief Committee, lodged a lengthy statement of claim in the Consular Court, but they were met by a question of jurisdiction. Tippoo was a subject of the Sultan of Zanzibar and under the then subsisting treaty between Zanzibar and Great Britain the Consular Court could only take cognizance of the claim with the Sultan's consent. It was not until the 23rd December that that consent was forthcoming. The hearing of the case was then fixed for Boxing Day.

When Boxing Day came Stanley was destined to find that it was still far from being plain sailing. Tippoo Tib was in the Congo and it was therefore obvious that he could not be personally served with the summons. An attempt had been made to effect substituted service by delivering the summons to Tippoo's son Seif, but Seif had refused to accept service, saying that he knew nothing about his father's affairs. Mr. Cracknall, the Consular Judge, upheld this objection and ruled that the summons must be brought properly to the personal notice of the defendant and that the defendant must be given a reasonable time in which to appear and answer the claim. This meant that the case could not possibly be heard for many months. Stanley himself wanted to get back as soon as possible to Europe. Howbeit he had to make the best of it. With the help of his lawyer he drew up and deposed to an affidavit in which he set out in brief the sum of Tippoo's alleged misdeeds. By means of this affidavit he obtained an order prohibiting Jaffer Tarya Topan from parting with the moneys in his hands to Tippoo Tib without the order of the court. Stanley's lawyer was also able to obtain the consent of the judge to the taking on the following day of the evidence of Stanley himself and of William Bonny, the sole surviving European member of the rear column.

Stanley and Bonny accordingly gave their evidence on the 27th December. Two days later they sailed from Zanzibar. Stanley took up his residence at a hotel in Cairo and in the course of fifty days penned nine hundred and three

(*) *In Darkest Africa* was published in June 1890. The action did not terminate until the 2nd October 1891.

pages of foolscap, which saw the light of day in two volumes as *In Darkest Africa*. That work aroused a storm of controversy which yielded a spate of literature. Something had gone wrong about the expedition and some scapegoat had to be found. Public opinion in England was divided as to who was the scapegoat, Stanley, Emin or Barttelot, but it was unanimous on one point. There was a villain to the piece and the name of that villain was Tippoo Tib. He had wilfully and deliberately broken his plighted word and thus brought misery and disaster on Stanley's rear column.

A melodrama, in which the villain does not come on to the stage to be hissed, is apt to fall flat however much limelight may be shed on the hero. Similarly, a lawsuit in which the defendant does not put in an appearance tends to be lacking in interest. The next step in the action was a long time in being taken, but one or two things of interest happened in Africa before the next entry was made in the judicial record of the case.

As readers of *In Darkest Africa* will have realized, Stanley arrived at the east coast just at the time when the German Government was taking steps to assume effective control over what was then German East Africa. These efforts resulted in a rising of the Arabs on the coast and of certain of the tribes in the hinterland. During the rising a number of groups of isolated Europeans were cut off and killed. In the midst of all the turmoil a small caravan of the London Missionary Society slowly made its way from Bagamoyo to Ujiji. The leader was Albert Swann, an ex-master mariner who was in charge of the Society's steamers on Lake Tanganyika and who afterwards became a magistrate in Nyasaland. He was the only European member of the party with previous experience of Africa. The other three, of whom two were women, were complete newcomers. There had been one or two unpleasant incidents on the way up from the coast and it had only been Swann's *savoir faire* that had saved the party from disaster. Eventually the little band reached Ujiji to be greeted by the sullen looks and scowls of the Arab and Swahili traders. As Swann afterwards confessed, his mind was full of misgiving.

Shortly before dusk a native came to Swann to tell him that he must come after dark to Rumalisa's house. Rumalisa—or to give him his proper name Mohamed bin Khalfan—was the trading partner of Tippoo Tib and the leading Arab in Ujiji. Accordingly after nightfall Swann went to Rumalisa's house. To his surprise he was ushered into the harem. After the womenfolk had been dismissed, Rumalisa told Swann that he had brought him there because he had something to show him which must be kept very secret. He produced a letter in Arabic. It was from Tippoo Tib. The writer had learnt that there was a plot afoot to murder the missionaries and to seize their boats and other property. The ringleaders had written to Tippoo to ask for his help and had promised him the Mission's lake steamers as his share of the loot. Tippoo Tib therefore wrote to Rumalisa solemnly adjuring him to do all that lay in his power to prevent such a thing from coming to pass. After reading the letter

Rumalisa turned to Swann. If Swann would place himself unreservedly in his hands Rumalisa would see him and his party safely to the southern end of the lake. Swann decided to take Rumalisa at his word and that word was not broken.⁽¹⁰⁾

A month later Tippoo Tib came to see Swann. He had received the summons from the Consular Court and was boiling over with indignation. All Stanley's allegations were foul lies and he was going to Zanzibar to answer them. He asked Swann to write a letter to the English Balozi at Zanzibar to inform him that he was coming and he wanted Swann to "tell Europe Stanley lies". So Swann wrote the letter. That letter is still extant⁽¹¹⁾ and one passage therein deserves to be quoted :

"Tip-pu-tip, Mohamed bin Khalfan and Bwana Nzige with Nassur bin Seif are coming to Zanzibar. They will leave in two months and come peaceably—at least they have asked me to inform our Consul to this effect . . . They are desirous to face Stanley over this claim of his which they do not admit to be valid and Europe is the desired arena for the conflict and, if they have right on their side, which is more than likely, I hope they will win.

What Europeans say will decide their movements. I am not writing from hearsay or guessing. I have it from themselves. Through the whole business Mohamed bin Khalfan has stood nobly by us and to myself has been a staunch friend. Mind, I am not saying he is an angel, but let us be honest with these men and not swallow everything any popular man may wish to ram down our throats. It strikes me, if some of the African travellers said the moon was three cornered in Africa, many would believe them just now. I say give Tip-pu-tip a hearing and two to one he opens the eyes of now blind Europe."

So Tippoo Tib set out on his journey down to the coast. Soon after he reached Tabora he was attacked by dysentery. He was dangerously ill for four months and owed his life to the nursing of the White Fathers at Kipalapala. After his recovery he continued the journey to Mpwapwa. Here he was specially invited to the Church Missionary Society Mission. The missionaries had been asked to try to get in touch with him by Mrs. Jameson, the widow of one of Stanley's officers who had died in the Congo. One result of the ink-spilling in Europe over the Stanley-Emin controversy had been that a host of scandalous rumours, based for the most part on the most slender and most unreliable authority, had been put into circulation about certain officers of the expedition. One such rumour had been circulated about Jameson. There is no need to repeat it. It was as utterly baseless and untrue as it was foul. Everybody who knew Jameson has spoken of him as a gentleman and the soul of honour. Not unnaturally the rumour had greatly distressed his wife. She

⁽¹⁰⁾ Swann, pp. 168-72.

⁽¹¹⁾ It is incorporated in the judicial file.

had appealed to Stanley to denounce it but Stanley and Jameson had had their quarrels and Stanley was not prepared to help. So Mrs. Jameson resolved to go out to Africa and herself collect on the spot the evidence to vindicate her husband's memory. When she reached Zanzibar she was told that it would not be safe for her to proceed to the mainland, but several missionaries undertook to do their best to obtain the necessary information. Tippoo Tib's arrival at Mpwapwa provided an unexpected opportunity. Like "the great explorer", "the notorious slave dealer" had had his quarrels with Jameson, but as soon as he heard the calumny he gave the story the lie.⁽¹²⁾

From Mpwapwa Tippoo Tib continued his way down to the coast. He reached Zanzibar towards the end of September 1891. He at once engaged a lawyer, who prepared a lengthy written statement denying Stanley's allegations and counterclaiming for the price of goods supplied to the expedition. That statement was filed in court on the 1st October 1891. On the 2nd October the learned judge made the following entry in his case file :—

"Merwanji applies to withdraw case on condition that defendant withdraws all claims against them (the plaintiffs).

Cumrudin on behalf of Tippoo Tib consents.

Application granted."

But why this anti-climax? I can hardly think that Stanley believed that such an ending had resulted in strict justice being done. But it has to be remembered that Stanley's name did not appear upon the record as being the plaintiff. The actual plaintiffs were the Emin Pasha Relief Committee, a body of prominent British citizens bearing honoured names. Though none of them ever made a public pronouncement on the subject, perhaps these gentlemen had their reasons for not wishing to continue the action. One can in fact suggest what certain of those reasons may have been.

We must go back to the days when the case was first instituted in 1889. As already said, some evidence was taken at that date. In the first place Stanley swore an affidavit. Later he and William Bonny gave their evidence viva voce. No further evidence was given by anybody at any later stage of the proceedings, but subsequently to 1889 certain materials came to hand which throw considerable light on the matters in dispute. I venture to think that it was not so much Tippoo Tib's defence or his counter-claim which induced the Committee to drop the case as a comparison of these materials with Stanley's sworn statements.

First of all it should be explained what those materials were. They include in the first place Stanley's own writings and in particular *In Darkest Africa*. There are also the writings of other officers of the expedition, *My Personal Experiences in Equatorial Africa* by Surgeon Parke is a little known work, but it is a well-balanced account of the expedition and invaluable for the very

⁽¹²⁾ Brode, p. 234. Sienkiewicz, p. 114.

varied scientific data which it contains. The writer was able to appreciate a number of Stanley's shortcomings but he none the less had a profound admiration for him as a leader. There are also the letters and diaries of Jameson and Barttelot, two other officers of the expedition. Extracts from these have been published by Major Barttelot's brother. It is true that both these men quarrelled with Stanley, but it has also to be remembered that the letters of both of them show that they profoundly mistrusted Tippoos Tib and believed that he was trifling with them. It has further to be remembered that neither man was writing with an eye to future publication. Both men perished in Africa and what they wrote went home to England without any opportunity of amendment or alteration. In the words of Major Barttelot's brother :

"The diaries and letters direct from the hands of the dead form evidence of supreme value. *Litera scripta manet*. They have not been able to add a little to what was written at the time."⁽¹³⁾

It should also be mentioned that Tippoos Tib himself has had his biographer, Heinrich Brode, formerly of the German Consulate at Zanzibar. The writer availed himself of a manuscript autobiography which Tippoos Tib had composed in Kiswahili.⁽¹⁴⁾ On the whole Brode's book is a well-balanced work, though written in a somewhat heavy style. If here it is not referred to in any great detail, it is not because the work is unreliable but because such reference would amount to nothing more than the putting of the word of one man against the word of another. What is needed in this dispute is evidence from some extraneous source.

To go back to the evidence given in the case, the gravamen of Stanley's allegations was that the failure of Tippoos Tib to supply porters brought about the disasters which befell the rear column of the expedition. In his viva voce evidence he said :

"If the agreement had not been made, I should have taken more people from here—of course from Zanzibar."

From those last four words it may possibly be inferred that Stanley thought the Consular Judge was a somewhat dense person, but possibly the Judge was asking himself the following question : How was Stanley proposing to transport an additional six hundred men by sea from Zanzibar to the mouth of the Congo? It must be remembered that this contract with Tippoos Tib was concluded without reference to the Relief Committee in London. It owed its origin to a brain-wave of Stanley following upon a more or less fortuitous meeting with Tippoos Tib. If the Committee had wanted twelve hundred instead of six hundred porters they would have sent instructions in advance for Messrs. Smith, Mackenzie & Co. to recruit that number and they would

⁽¹³⁾ Barttelot, p. 8.

⁽¹⁴⁾ Published by Brode with a German translation in the proceedings of the Institute of Oriental Languages, Part III. Tippoos Tib also gave A. J. Swann "an autograph copy of a brief history of his life" (Swann, p. 177).

also have arranged for the necessary additional transport. The s.s. *Madura*, which was specially chartered for the expedition, was a troopship on the India run. Its accommodation for the porters was 'tween decks. Surgeon Parke informs us that the vessel was registered to carry seven hundred and fifty passengers 'tween decks. In actual fact it left Zanzibar carrying 'tween decks six hundred and ninety-eight passengers (Zanzibaris, Sudanese and Somalis). It was therefore quite out of the question that the *Madura* should have carried an additional six hundred men.⁽¹⁵⁾

Stanley's allegations regarding the non-supply of porters by Tippoo Tib went through at least two phases. The first of these phases is quite definite. Tippoo Tib never supplied any able-bodied porters at all. This is what Stanley said in his affidavit on the 26th December 1889 :

"2. That the said Tippoo Tib failed wholly to perform his part of that contract in that he did not supply a single able-bodied porter to me in pursuance of the agreement.

3. That the said Expedition had to bear great hardships and privations in consequence of the said breach of contract and had also to sustain great pecuniary losses which to the best of my knowledge, information and belief I estimate at about £10,000.

4. That so far as I know the said Tippoo Tib broke his contract as aforesaid wilfully and perversely and had no justifying cause whatever for so doing. And I further say that in the matter of the said agreement the said Tippoo Tib acted in a fraudulent and perfidious manner and thus seriously jeopardized the lives of the members of the Expedition and was mainly the cause of the deaths of one hundred and fifty of them."

At first glance the impression one gets from reading the affidavit is that Stanley intended the Court to understand that he never received a single porter from Tippoo Tib. If that was his intention, *In Darkest Africa* and Stanley's subsequent viva voce evidence contradict the affidavit. The expedition did in fact obtain porters from Tippoo Tib, albeit at a very late date.

Writing some years later in regard to these porters, Stanley said "a more undisciplined and cantankerous rabble could not have been found in Africa". It may consequently be urged that Stanley sought in his affidavit to stress the word "able-bodied". If so, the words "he did not supply a single able-bodied porter" amount to what lawyers term "a negative pregnant", inasmuch as they are ambiguous and capable of more than one interpretation. In this connection, moreover, it is to be observed that the affidavit was sworn in support of an application to attach before judgment certain moneys lying in the hands of Tippoo Tib's banker and that that application was successful. But assuming that the word "able-bodied" has more significance than at first sight appears, *In Darkest Africa* shows that three of the headmen and sixty-five

⁽¹⁵⁾ Parke, p. 490.

of the porters supplied by Tippoo Tib elected to continue the journey with Stanley and each carried a load from Baralya to Lake Albert. No able-bodied porter could reasonably have been expected to do more than these men actually did.

Stanley in fact admitted as much when it came to giving evidence viva voce four days later. In that evidence he took up a different attitude in regard to the non-supply of porters. On this occasion he said :

“On arrival at Stanley Pool I sent Tippoo to his place and went myself to Yambuya and waited twelve days and, as he did not arrive, started out. I arrived (at) Yambuya June 16th and left June 28th.”

Again we must refer to *In Darkest Africa* to see how far this statement was true. On the 24th June 1887 Stanley issued written instructions to Major Barttelot, whom he was leaving in charge of the rear column at Yambuya. They contain the following passages :—

“The steamer *Stanley* left Yambuya on the 22nd of this month for Stanley Pool. If she meets with no mischance, she ought to be at Leopoldville on the 2nd of July. In two days she will be loaded with about five hundred loads of our goods, which were left in charge of Mr. J. R. Troup. This gentleman will embark, and on the 4th of July I will assume that the *Stanley* will commence her ascent of the river and arrive at Bolobo on the 9th. Fuel being ready, the one hundred and twenty-five men in charge of Messrs. Ward and Bonny, now at Bolobo, will embark, and the steamer will continue her journey. She will be at Bangala on the 19th of July and arrive here on the 31st of July. Of course the lowness of the river in that month may delay her a few days, but, having great confidence in her captain, you may certainly expect her before the 10th of August.

It is the non-arrival of these goods and men which compel me to appoint you as commander of this post. But as I shall expect shortly the arrival of a strong reinforcement of men (sc. Tippoo Tib's carriers) greatly exceeding the advance force, which must at all hazards push on to the rescue of Emin Pasha, I hope you will not be detained longer than a few days after the departure of the *Stanley* on her final return to Stanley Pool in August.”⁽¹⁶⁾

In other words Stanley did not want Tippoo Tib's carriers until the arrival of the stores which had been left behind at Leopoldville, and which under the most favourable conditions could not possibly have arrived until at least one month after Stanley and the advance party left Yambuya.

In *In Darkest Africa* Stanley gives an account of a conversation which he alleges he had with Major Barttelot on the day on which the already quoted instructions were issued :

⁽¹⁶⁾ *In Darkest Africa*, I, 115.

"If Tippoo Tib is here in nine days, it will be the biggest wonder I have met."

"Why?", asked the Major, looking up half wonderingly.

"Because to provide six hundred carriers is a large order. He will not be here in fifteen days or even twenty days. We must be reasonable with the man . . . The *Stanley* will not be here until the 10th or perhaps the middle of August. That will be about seven weeks—forty-two days hence. Why do you want to have six hundred men in your camp doing nothing waiting for the steamer? Idle men are mischievous."⁽¹⁷⁾

Stanley's instructions to Barttelot are therefore distinctly at variance with the second statement, which he made upon oath in the Consular Court.^(17a)

In Darkest Africa could indeed have provided counsel for the defence with a wealth of other material for purposes of cross-examination of Henry Morton Stanley, but there is no necessity for going into minute details. As that book and the letters and diaries of Jameson and Barttelot show, one fact none the less remains undisputed. Though Tippoo Tib did eventually supply porters to the expedition it was not until many months after Stanley had set out with the advance party. It may consequently be thought that this is a case of a strong-minded and overbearing personality imposing his will upon a less strong-minded person and inducing the latter to undertake an exceedingly onerous contract. If so, it may possibly be said that Tippoo Tib, having made the bargain, ought to have shown greater diligence in trying to carry it out. Some people may perhaps be prepared to offer the same criticism of Tippoo Tib as that which Stanley says he made to Barttelot :

⁽¹⁷⁾ *In Darkest Africa*, I, 121-22.

^(17a) At a later date Stanley wrote in his Autobiography (p. 355) as follows :—

"On reaching the Pool (sc. Stanley Pool) the steam flotilla was found to be capable of carrying four-fifths of the expedition . . . It should be remembered that the last news from Emin was an urgent appeal for help. The last solemn injunction to us was to hurry forward, lest we be too late . . . Now was the time, if ever, to prove our zeal had not cooled. Six weeks, probably two months, would pass before the entire force could be collected at Yambuya. If Emin was in such desperate straits as he had described, his total ruin might be effected in that time, and the disaster would be attributed to that delay—just as Gordon's death had been attributed to Sir Charles Wilson's delay at Metemneh. To avoid that charge, I had no option but to form an Advance Column whose duty would be to represent the steady progress of the expedition towards its goal, while a Second Column, under five experienced officers, would convey after us, a few weeks later, the reserve stores and baggage."

An entry in Barttelot's diary, which was made at Leopoldville, Stanley Pool, on the 5th May 1887, shows that Stanley had decided to divide the expedition into an advance and rear column long before he reached Yambuya :—

"I saw Stanley; he came to a chim beck, and told me he intends to leave me behind at Bolobo, and that I was eventually to go up to the Falls with Troup and Bonny, who remain with me at Bolobo; I am to proceed to an entrenched camp, which he would have already formed, and assume command. Should I have enough porters, and can get guides and men from Tippoo Tib, I am to proceed to Wadelai (sc. Emin's headquarters)." (Barttelot, p. 90).

"He is not an European—taught to be rigidly faithful to his promise. Inshallah! was it he said? To-morrow—Inshallah means the day after—or five days hence, or ten days." (18)

But before any judgment can be passed in the matter one must examine the terms of the contract. It is a remarkable fact that on no page of *In Darkest Africa* is there anything but the most casual reference to the details of Tippoos Tib's contract. It is equally evident that Major Barttelot, upon whom fell the responsibility of seeing that Tippoos did carry out the terms of the contract, was completely in the dark as to what those terms were. What readers of *In Darkest Africa* would gather and what Major Barttelot apparently gathered was that the contract was one in general terms whereby Tippoos Tib undertook to supply porters at a certain rate of remuneration. In actual fact the contract still exists. (19) Internal evidence shows that Tippoos Tib had not just signed it light-heartedly along the dotted line. He had done a bit of bargaining and had managed to get some, if not all, of his own stipulations incorporated into the document.

The contract contained ten articles. It is not proposed to quote all of them but several of them are important. Article I stipulates that Tippoos Tib shall supply Stanley with porters who "shall be capable of carrying a load not exceeding sixty-five pounds in weight from the Congo River to the Lake and back". Article III also refers to the maximum load to be carried by the porters: "Each man will be at the disposition of Mr. Stanley for carrying any load not exceeding sixty-five pounds weight or for the defence of the camp or caravan as the circumstances may require".

Stanley signed the document containing these stipulations as to the maximum load on the 24th February 1887. Stanley's own version of his diary for the dates, 24th and 25th February, contains the following reference to the contract:

"After a good deal of bargaining I entered into a contract with him, by which he agreed to supply six hundred carriers at £6 per loaded head—each round trip from Stanley Falls to Lake Albert and back. Thus, if each carrier carries *seventy pounds* weight of ivory, one round trip (20) will bring to the Fund £13,200 net at Stanley Falls."

"He is not an European—taught to be rigidly faithful to his promise" were the words used by somebody in speaking of Tippoos Tib. No doubt the difference between sixty-five and seventy pounds is only a matter of five pounds, but it was an extra five pounds to be carried by each one of the porters over some four hundred miles of the most difficult terrain in the whole of Africa.

(18) *In Darkest Africa*, I, 121. At a late stage of his viva voce evidence Stanley said: "Tippoos was excused from his exact punctuality but these repeated delays prove he never intended to keep his promise."

(19) It was an exhibit in the lawsuit and is set out in full in Appendix A.

(20) *In Darkest Africa*, I, 63.

Accepting Stanley's calculations, the net result of the porters carrying this additional five pounds per head would be to bring in an additional profit of just under £1,000 to the Relief Committee's funds. When Stanley made this entry in his diary, it did not augur well for the future.

To turn back now to the contract, Article II thereof reads as follows :—

"Each man shall be armed with a gun at Hamed's expense and be further provided with one hundred bullets."

There is no ambiguity about that. The responsibility for supplying guns and bullets was to be on Tippoo Tib. But if guns and bullets were to be effective they had to be supplemented by powder and caps. It was here that Tippoo Tib was able to make some sort of a stand. He declared himself to be unable to supply these things. So Article IX was inserted in the contract. It reads as follows :

"Powder and caps shall be supplied by Mr. Stanley."

Again, there is no ambiguity about that Article. The contract was not entirely unilateral. There were some obligations thereunder which had to be fulfilled by Mr. Stanley.

At the close of the viva voce evidence which Stanley gave in the Consular Court on the 27th December 1889, Judge Cracknall asked the witness a couple of questions. These were Stanley's answers to those questions :

"Tippoo Tib never intended to keep his contract: it was a case of blackmail. I was always ready to fulfil the contract."

If Stanley was always ready to fulfil the contract, he was presumably always ready to supply caps and powder to Tippoo Tib's porters in accordance with Article IX thereof. Tippoo Tib, on the other hand, emphatically denied the truth of this statement. This was what he said in his autobiography :

"They gave me and the Major a boat to bring us to Stanley Falls. So we came to that place. And I asked Stanley for powder, so that I might arm the five hundred men, whom I was to provide, if I could get them; but he said: 'I cannot spare you any of the powder I have, but buy some there at Stanley Falls (sc. from the Congo Free State officials)'." (21)

If it was solely the word of Tippoo Tib on this matter against that of Stanley, we should not be much further forward. But Tippoo Tib receives corroboration from Major Barttelot. The following entry appears in the Major's diary under the date 17th June 1887, after the arrival of the Major and Tippoo at Stanley Falls :

"I had a palaver with Tippoo Tib. He is evidently a bit sore with Stanley about the men he promised to give him, for Stanley promised he would supply them with ammunition: and to the best of my belief the ammunition is left behind, to come up the next trip. Tippoo Tib must

(21) Brode, p. 200.

have been told this by Stanley, and asked to supply it, to be repaid hereafter; but he thinks it a breach of contract, and also says his men have no powder. I effected a sort of compromise by making him half promise to supply, at any rate, two hundred men with ammunition, to be repaid.”⁽²²⁾

From Stanley Falls Barttelot proceeded to Yambuya. After his arrival there he made the following entry in his diary on the 25th June :

“I went to see Stanley, and had a row with him The day previous I told him that Tippo Tib did not trust him, and thought he (Stanley) had broken faith with him concerning the ammunition, &c., which had fetched Stanley rather.”⁽²³⁾

In two letters to his brother-in-law, Major Selater, Barttelot explains the manner in which Stanley showed he was “fetched”. In one letter he says Stanley “got into an awful rage and said all sorts of things, because he knew what I said was true”.⁽²⁴⁾ According to the other letter, “when I told Stanley this, he said he did not want Tippo Tib’s aid : he could do very well without the men”.⁽²⁵⁾ Writing at a much later date to his former commanding officer, Sir Redvers Buller, Barttelot said : “Tippo asked me : ‘Is the powder in the camp?’ I said ‘No,’ but that it would come on the *Stanley*. Then he said, ‘The men shall not come—Stanley has deceived me’. On June 19th I left the Falls and got to this place on the 22nd. I told Stanley what Tippo Tib had said. He got furious and he said he did not want the men : he could do the work himself.”⁽²⁶⁾

In June 1888 gunpowder was eventually supplied to Tippo Tib’s porters^(26a), but not ammunition caps. In his diary of the 9th June 1888 Major Barttelot records that he “looked into the loads; all satisfactory until the issue of caps, when eighty per cent of them were found to be bad”.⁽²⁷⁾ Jameson’s diary of the same date shows that this defect was not due to unexpected deterioration in the tropics, but was one of which Stanley was apparently fully aware and which he could have remedied, if not at Zanzibar, at any rate whilst *en route* in Cape Town. The entry in Jameson’s diary reads :

“Nearly all the caps turned out to be bad. When passing them on board the s.s. *Madura* I tried some of them and told Mr. Stanley they were bad, but he would not listen to me.”⁽²⁸⁾

⁽²²⁾ Barttelot, p. 108.

⁽²³⁾ Barttelot, pp. 112 and 113.

⁽²⁴⁾ Barttelot, p. 119.

⁽²⁵⁾ Barttelot, p. 112.

⁽²⁶⁾ Barttelot, p. 303.

^(26a) Tippo Tib admits this in his written defence.

⁽²⁷⁾ Barttelot, p. 127.

⁽²⁸⁾ Barttelot, p. 128.

The rear column could not move until the men were properly armed. Guns, bullets and powder were useless without the caps. An order signed twenty-four days later by Major Barttelot shows that these caps had eventually to be supplied by Tippoo Tib.⁽²⁹⁾ He in his turn had to obtain them from the officials of the Congo Free State who expected to be paid for them.

In conclusion it may not be out of place to repeat two statements which Stanley made in the course of his evidence. The first appears in his affidavit:

“So far as I know the said Tippoo Tib broke his contract as aforesaid wilfully and perversely and had no justifying cause for so doing.”

The second was made in answer to Judge Cracknall:

“I was always ready to fulfil the contract.”

As previously said, both these statements were made upon oath. Perhaps from the other information here given readers may be able to say how far they believe that either statement represents the actual truth. Perhaps they may also feel themselves able to make a shrewd guess as to the reasons which prompted the gentlemen of the Emin Pasha Relief Committee to discontinue the action, which Stanley had instituted against Tippoo Tib in the Committee's name and at the Committee's expense.

APPENDIX A.—THE CONTRACT BETWEEN STANLEY AND TIPPOO TIB

Below is given the full text of the contract between Stanley and Tippoo Tib. It will be noted that the contract does not give the actual number of men whom Tippoo Tib was to supply. Stanley consistently gives the number as six hundred and from other sources it would appear highly probable that it was verbally understood that this was to be the number of men to be supplied. On the day after the contract was signed, Acting Consul-General Holmwood wrote to Lord Salisbury to inform him that “I was able to assist in effecting an arrangement between Tippoo Tib and Mr. Stanley, by which the former has engaged to place six hundred of his followers at the latter's disposal on arrival of the expedition at Stanley Falls” (*Africa*, No. 8 (1888), p. 21).

“The following agreement has been entered into between Henry Morton Stanley and Hamed bin Mahomed el Marjebi Tippoo Tib:—

Art. I.—Henry Morton Stanley agrees to accept the services of a number of able-bodied men in Hamed bin Mahomed's employ who shall accompany him to the Albert Nyanza in the capacity of armed porters, that is, who shall be effective in the use of a gun for defence and shall be capable of carrying a load not exceeding sixty-five pounds in weight from the Congo River to the Lake and back at the following rates and following conditions.

Art. II.—Each man shall be armed with a gun at Hamed's expense and further be provided with one hundred bullets.

Art. III.—Each man will be at the disposition of Mr. Stanley for carrying any load not exceeding sixty-five pounds weight or for the defence of the caravan as circumstances may require.

(29) This order is an exhibit in the judicial proceedings and reads:—

“Singatini, July 3rd, 1888.

Messrs. Smith Mackenzie & Co.

Hardware—
40,000 caps
percussion.

Please pay to Sheikh Hamed bin Mohamed or order for goods received as per margin on behalf of the Emin Pasha Relief Expedition the sum of Sixty-eight pounds sterling (£68 0s. 0d.).

(*Sd.*) Edward M. Barttelot, Major.”

Yambya 8

portion of the lot £2000.

Mr James offered £10000 for
himself and to under-commit
to give £10000: The deed is intended
to communicate with the land.

To land.

James James intended
to keep his interest: It was
a case of blackmail.
James always ready to fulfill
the interest.

Henry Miltunley

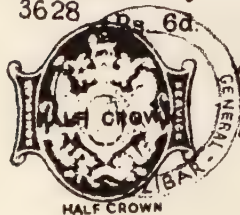
service that was agreed to be rendered by
 Tupper Tibb and the place where the same
 was to be performed I say that it was
 within the contemplation of both parties
 at the time we made the contract that
 the failure on Tupper Tibb's part to keep
 his promise would be productive of
 such disastrous consequences as have
 actually occurred.

Sworn before me
 this 26 day of Decr. 1889 }

Henry Winstanley

3628

Pa. 6d.



Wm. Lankford
 Judge of the Consular Court -
 Zairihar

Art. IV.—His service begins on the date of leaving the Congo River with the expedition for the Albert Nyanza and terminates on the return of any portion of the expedition to the Congo.

Art. V.—The time occupied by the journey from the Congo to the Albert Nyanza and back to the Congo shall not exceed six months, or if longer no increase of pay shall be due.

Art. VI.—For the service above each man shall receive Thirty dollars together with food during the time of his employment.

Art. VII.—All of these men, if loaded with ivory at the Albert Nyanza, shall deposit the said ivory at the Congo and within the district of Stanley Falls as the officer in charge shall direct and his receipt for the safe arrival of the same on the Congo shall be a sufficient voucher for the discharge of their part of this agreement.

Art. VIII.—If circumstances shall warrant a re-engagement of these men or any number of them for a repetition of this duty, then the above articles shall stand for a second contract upon the same terms and conditions.

Art. IX.—Powder and caps shall be supplied by Mr. Stanley.

Art. X.—For every round journey thus made Sheikh Hamed shall be entitled to a bonus of one thousand dollars.

Zanzibar, February 24, 1887.

(*Sd.*) Henry M. Stanley.

(*In Arabic*) Ahmed bin Mahomed el Marjebi.

Witness:—

(*Sd.*) Fredc. Holmwood.

(*In Gujarati*) Khoja Kanji Raipar."

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Kilimanjaro and Mount Kenya: some comparisons,
with Special Reference to the Mammals and
Birds; and with a Note on Mount Meru

By R. E. Moreau

With a Bibliography of Kilimanjaro, by C. Gillman

INTRODUCTION

SOME TIME AGO I had the idea that it would be interesting to make a comparison between the respective mammal faunae and bird faunae of Kilimanjaro and Mount Kenya. I soon found that although it is nearly a hundred years since the mountains were discovered by Europeans, and nearly eighty and sixty years respectively since the moorlands of Kilimanjaro and Mount Kenya were first reached by explorers, a great deal of preliminary work had to be done to assemble the scattered information. As a start, therefore, I made the first attempt at a comprehensive account of the mammals and birds of Mount Kenya, discussed the results in relation to the vegetation zones and geographical position, and provided the first bibliography of the mountain.* For Kilimanjaro much more of the preliminary work had already been done, but it has been an unpleasant surprise to find on careful examination that the published information about the mammals of the higher levels of Kilimanjaro is hopelessly defective. In fact, even including the unpublished records which have most generously been communicated to me, it is at present impossible to make a useful comparison between the mammal fauna of Kilimanjaro and that of Mount Kenya. However, even though I cannot carry out my original plan it is, I think, useful to put on record the present extent of our knowledge and also to discuss certain features of the environment that must be taken into account in any zoo-geographical discussion.

The present studies are intended to deal only with the montane mammals and birds. The limits of the montane fauna are easy to define in general but not in particular because of the difficulty of fixing the lower limit. I aim at including primarily the inhabitants of the moorland and the main forest belt, both of which are ecological islands, even though the latter is in ring form. If all the species of mammals and birds that enter the lowest edges of the forest or the lowest clearings were included the elements significant for discussion of the montane zoo-geography would be obscured. I have therefore tried to concentrate on those species normally living for the most part above about 6,000 feet. There is no defined lower edge to the forest belt. Vestiges and fringing forest occur right down to the plains surrounding both Mount

* "Mount Kenya: a contribution to the biology and bibliography." *J. E. Afr. Nat. Hist. Soc.* (in Press).

Kenya (on the east) and Kilimanjaro. As has been written before (Moreau, 1936) of the latter mountain, the actual "lower boundary of the main forest belt is the resultant of two opposed human forces . . . on the one side the conservative efforts of the Forest Department, on the other the agricultural pressure of the Wachagga and the grazing hunger of the Masai, powerfully assisted by the pyrotechnics of the native honey-hunter. Stabilization has more or less taken place where the Chagga are concerned. The same can be said with less certainty on the Masai front of the west and north, where, under a drier climate, the forest is more susceptible to fire. In consequence the lower edge of the highland forest and the local limits of many species of birds and mammals are to be regarded as adventitious, dependent on that unconscionable biotic factor, man".

I have to make a number of acknowledgments for unpublished information and for other help; especially to Captain and Mrs. M. S. Moore for allowing me to quote the information they obtained on their recent journey on Kilimanjaro, to Mr. R. W. Hayman of the British Museum in connection with the list of mammals, to Mr. C. L. Bancroft for an extract from the Forest Department files, to Mr. C. Gillman for discussion of a number of points, to the Rev. Dr. R. Reusch for personal information and to Mr. P. J. Greenway for botanical assistance. I am indebted also to Mr. H. F. I. Elliott and Mr. N. R. Fuggles-Couchman for reading the draft of this paper, and to the former for allowing me to quote important unpublished bird-records of his.

For Kilimanjaro the essential work of compiling a bibliography had already been done by Mr. Gillman in 1932 (*The Iccap*, 1, 69-71); but as that source will not be a very accessible one for future workers he has kindly acceded to my suggestion that his bibliography might be brought up-to-date and reprinted following this present paper.

HISTORICAL AND BIBLIOGRAPHICAL

The history of exploration and scientific documentation has been very different on the two mountains, with Kilimanjaro on the whole far in the lead. Only fifteen years after it had first been sighted, Baron Carl Claus von der Decken made the first attempt on it, but reached no further than about the top of the forest belt. In the following year (1862) he and Kersten got to over 14,000 feet. British, Germans, Austrians and an American succeeded these pioneers, but none got higher than the saddle between Kibo and Mawenzi. Most left some account of their expeditions; Johnston, who collected both plants and animals, devoted a book to the mountain, and made by far the most important contribution to its biology up to that date. The summit of Kibo was eventually gained in 1889 by Hans Meyer, who described his journeys at length in several different forms. He published a book on the subject in 1890 and another, which is regarded as the standard work on the mountain,

in 1900, both accompanied by large-scale maps. Meanwhile Volkens, whose botanical work on and round the mountain had lasted for several months of 1893 and 1894, had produced a book on the subject in 1897. Incidentally his map shows that a *Schutzhütte* had already been established, apparently the original of Johannes Hut. Thus, by 1900 Kilimanjaro had already inspired four full-sized books that contain a great deal of information of scientific value. In the last twenty years Dundas and Geilinger have contributed two more, though the former is not in the same class as the others. There has also been a book by Stuart-Watt, about which, to judge from the review in the *Geographical Journal* 77, page 81 (1932), the less said the better.

These are all general books, but the most imposing publication connected with the mountain deals in three volumes with the work of the Swedish Zoological Expedition under Sjöstedt, which spent the years 1905 and 1906 on and around Kilimanjaro and Mount Meru. Finally, to complete the list of books, Klute (1912) has collated the physical data. In addition to all these full-length publications, there have been numerous scientific papers dealing with different aspects of Kilimanjaro, apart of course from mountaineering accounts.

By comparison Mount Kenya makes a poor showing. Teleki climbed it to 13,800 feet in the 'eighties, but nearly fifty years after its discovery, and at a date when Kilimanjaro had already been well mapped and climbed to the top, and its biological aspects described in some detail, so little was known about Mount Kenya that it was still an open question whether it had a well-preserved crater, hardly any plants or animals had been collected on it, and the estimates of its height varied between 18,000 feet and 23,000 feet. The magnificent effort of Gregory in the early 'nineties removed the worst of these reproaches—his *Great Rift Valley* (1896) is the finest story of African exploration I know, all the more striking by comparison with the despicable circumstances of its start. Mackinder, with his successful first ascent to the top in 1899, did more; but no second ascent was made until 1929 and that was pure mountaineering. No book was written about the mountain until Dutton's *Kenya Mountain* (1930), still the only one, but of little scientific value, except for an appendix. Widely scattered papers, mostly Swedish or American, have dealt with the zoology and the botany. Nevertheless, the available information about the Mount Kenya birds proves when collated to be at least as good as that for Kilimanjaro and that about the Mount Kenya mammals by far the better.

On both the mountains the biological information is most unevenly distributed. On Kilimanjaro a very large part comes from between east and south-west, Rombo to Kibongoto. Some collecting, almost exclusively botanical, and some observation has been done on the north, above Engare Rongai, by Volkens, Geilinger, the Moreaus and Gilbert Rogers (no published results). Nothing seems to be known about the exceptionally difficult country at the eastern foot of Mawenzi; and for the entire sweep of the mountain on the west

and north-west, very little information of any kind has been published.* By contrast, on Mount Kenya the early work was done in the south-west corner by Teleki and Gregory. Subsequent information nearly all comes from the west, north-west and north-east (above Meru—which is, of course, nothing to do with Mount Meru). The whole south-eastern quadrant of Mount Kenya, which is the most deeply cut by ravines, the wettest, and potentially the richest biologically, is practically undocumented, except for some unpublished departmental information.

TOPOGRAPHICAL

This is no place to attempt any general description of either mountain. I wish only to stress certain features that must be taken into account when, ultimately, the montane faunae are sufficiently well known for a definitive analysis and comparison of them. Apart from the vegetation, which is dealt with in the next section, two elements are important in this connection, the conformation and the position in relation to other highland areas.

No one having the slightest acquaintance with the upper levels of the two mountains can fail to gain the impression that Mount Kenya provides a great rolling plateau between its snow-peaks and its forest, and that on Kilimanjaro the corresponding area is much smaller and steeper. This may be emphasized by considering that while the plinth of Kilimanjaro is actually smaller than that of Mount Kenya, Kilimanjaro has two peaks, Kibo of about 19,185 feet,† Mawenzi of about 17,300 feet, with a long saddle between them. Mount Kenya has only one single close group of peaks all reaching just about 15,000 feet. The relative areas at high altitudes on the two mountains are brought out in Table 1, which shows that the area available between 10,000 and 15,000 feet, which may roughly be taken as the moorland life-zone, is half as great again on Mount Kenya as on Kilimanjaro. The areas (square miles), obtained by calculation from the latest maps, are of course only approximate.

TABLE 1

			Above 9,000 ft.		Above 10,000 ft.		Above 11,000 ft.		Above 14,000 ft.		Above 15,000 ft.
Kilimanjaro	...	...	340	...	240	...	185	...	48	...	21
Mount Kenya	...	...	420	...	320	...	200	...	24	...	6

Several small lakes, some of which have been stocked with brown trout, exist on Mount Kenya between 11,000 and 14,000 feet and occasionally attract water-birds. On the Kilimanjaro moorland Meyer's map (1900) shows no permanent lakes. Dr. Reusch tells me that apart from a few temporary ponds on the south-south-east and south-west foot of Kibo, which dry more or less completely between October and March, there is a permanent pond on the north-west side of Mawenzi, fed by the Mawenzi snowfields. Another pond,

*The Tanganyika Forest Department have, however, made enumerations in parts of this area.

† 5,030 metres = 19,455 feet according to Klute, 6,010 metres = 19,718 feet according to Meyer 19,585 feet on T.T. 1 : 2,000,000. Dar es Salaam, 1941.

on the saddle, contains water for nine or ten months in the year, but is salty, while on the Shira plateau a semi-permanent pond is fresh during the rains, salty later in the year and usually dry in January and February. Gillman notes that all these ponds are shown on Klute's map (1912).

Salt-licks have been noted especially on the western edge of Mawenzi and salt-encrusted pebbles close to Kibo Hut (Moore).

In their relation to other highland masses the two mountains differ greatly. Mount Kenya is on the north-eastern edge of the Kenya highlands, which may be taken as forming a continuous mass of land capable, so far as altitude is concerned, of supporting montane animals and plants. Mount Kenya has a connection above the 6,000 feet level with the Aberdares and with the highlands west of the rift. The Aberdares in particular support a moorland association that is a close counterpart of that on Mount Kenya and is within sight of it.

By contrast Kilimanjaro is ecologically more isolated and is to a much greater extent the predominant montane element in a large surrounding area. The mountain has at its feet a hot dry steppe, less than 3,000 feet above the sea, in every direction except the west. There a narrow bridge at about 4,500 feet, which may be taken, I think, as about the lower limit of dispersal for most montane species in Tanganyika, connects Kilimanjaro with Meru and through that with the ridge of high ground running west through Monduli to Burko and Essiminingor, where it is terminated by the floor of the Rift Valley. On the east, Kilimanjaro is separated by a narrow but very low gap from the narrow ridge of the Pare mountains, which hardly exceed 7,000 feet. In fact Kilimanjaro above 5,000 feet may be regarded as constituting the eastern part, and more than half the area, of the montane ecological island that forms a narrow belt running west to the Rift Valley. Nevertheless, there are, as will be shown subsequently, several points in which Mount Meru has stronger affinities with the mountains west of the rift than with Kilimanjaro; so that the outline given above tends if anything to under-rate the ecological isolation of Kilimanjaro and its contrast to Mount Kenya in this respect. Moreover, the very small moorland areas on Mount Meru and, on the far side of the rift, Loolmalassin, zoologically still most imperfectly known, are the only ones nearer to Kilimanjaro than Mount Kenya itself, two hundred miles away.

VEGETATIONAL

On Mount Kenya the outstanding features are—

(1) The forest belt, deepest on the south and south-east, narrows northwards on both sides of the mountain and disappears altogether at the northern end. The result is that a broad, unimpeded, grassland corridor is provided from the game country of the Northern Frontier Province to the moorland; a corridor that cannot fail to have made the incursion of mammals easier. .

(2) Except where this corridor occurs, the mountain is surrounded by a great belt of bamboo (*Arundinaria alpina* K. Schum.), which becomes the dominant, to the practical exclusion of trees, between about 8,500 and 10,000 feet. At the upper edge of the bamboos a belt of big trees, *Hagenia anthelmintica* G. E. Gmel. (*Brayera anthelmintica* Kunth), often occurs on the edge of the moorland.

(3) Giant groundsels and giant lobelias extend up to over 15,000 feet and the highest flowering-plant recorded, an everlasting (*Helichrysum*), is at no less than 16,500 feet. Two species of giant groundsel (*Senecio kenioidendron* R. E. and T. C. E. Fries and *S. brassica* R. E. and T. C. E. Fries) with their golden plumes of flowers and two giant lobelias (*Lobelia telekii* Schweinfurth and *L. keniensis* R. E. and T. C. E. Fries) flourish on the open moorland above about 11,500 feet.

If one were to accept the recent, and perhaps the most authoritative, description of the vegetation of Kilimanjaro, that by Engler (1925), one would conclude that Kilimanjaro provides no contrast to Mount Kenya in feature (1) and that it differs rather markedly in feature (3) as well as in feature (2). Both these conclusions would be wrong; and the reason why Engler gives such a false impression is that he based his statement not only on Volkens (1897) but also on the even earlier work of Meyer (1890).

Because Engler has written with all the authority of the *Pflanzenwelt Afrikas* in the *Vegetation der Erde* series it is desirable to traverse his statements in detail where necessary. Moreover the question of a break in the forest ring is of great importance in a discussion of the moorland fauna from a geographical and evolutionary point of view when that eventually becomes possible. Engler's statement (1925, pages 255-56), translated literally, is as follows :—

This forest begins in the south at about 1,900 metres (6,300 feet) a.s.l. and in general extends up to 2,600 metres (8,500 feet), but above Kibosho up to 3,000 metres (9,800 feet). In the north the forest is situated between 2,200 and 2,800 metres (7,200 and 9,200 feet) and in the north-west disappears completely, giving way to extensive scrub and grass formations. Above the limit of the unbroken forest, tongues of short-tree stands run up to 3,200 metres (10,500 feet) along the water-courses and depressions on the south side.*

Elsewhere (pages 251-52) Engler states :—

Closed forest on the west up to 3,000 metres (9,800 feet) . . . on the south to 2,800 metres (9,200 feet) abuts on the mountain meadows† of

*Hollister, *U.S. Nat. Mus. Bull.* 99, Part 3, p. 7 (1924), makes an error in stating that the timber line is 13,000 feet on Kilimanjaro.

†A literal translation of *Bergwiesen*, itself a badly un-descriptive term, since the clumpy nature of the grass and the woody nature of the rest of the vegetation are quite unlike any characters of a meadow that suggest themselves automatically to a European. "Moorland" is a preferable term, though by no means exactly descriptive of these areas of high-altitude grassland and scrub.

the sub-alpine region or on tongues of woodland or on thickets of giant heather. . . . Sub-alpine region up to about 3,400 metres (11,100 feet) with . . . patches of giant heather or up to 3,600 metres (11,800 feet) with *Ericinella*. Alpine region, lower part, up to 4,200 to 4,500 metres (13,800 to 14,700 feet). Low bushes of *Euryops*, tufts of grass and cushion plants between the blocks of stone. Upper part, moss and lichens.

I am indebted to Gillman for detecting that Engler reproduced the statement that the forest disappears completely in the north-west word for word from Meyer (1890). At that date Meyer's remark can hardly have been based on personal observation, for there is no evidence that he had followed a route that either carried him through the forest of the north-west quadrant or enabled him to view it from below. On his accompanying map the lines delimiting the forest run round the north-east and disappear nearly due north of Kibo. From the south the lines are carried round until the upper one hits the Shira plateau. Every subsequent map has shown a complete forest belt but its conformation has varied greatly. That of Volkens (1897) shows a belt of forest, in a hearty and most convincing deep green, right round the mountain and actually wider (five to seven miles) between north-east and west than anywhere else on the mountain. On the other hand, in 1900 Meyer, while retaining the complete ring, makes it widest on the south and about two and a quarter to four miles wide all the way round the north and north-west.

D.O.A. 1 : 300,000 map 1911 provides another variant, for in that the widest part of the entire forest ring is in the north-west corner, eight miles wide opposite Ol Molog. On the other hand, the stretch north-north-east of Mawenzi is narrowed to one and a half miles. These features were reproduced in the General Staff G.E.A. 1 : 300,000 B.5 (1915); and with minor variations the same impression is conveyed by the very latest map (1943).

Sketch-maps published with my own papers (Moreau 1936 and *Ibis* 1937, plate 16) naturally followed the General Staff map, but since then further acquaintance with the mountain has suggested to me that the mapping of the forest belt is incorrect. I therefore approached Mr. C. L. Bancroft, Assistant Conservator of Forests at Moshi, who replied as follows :—

"I can definitely state that there is no break in the forest belt around Kilimanjaro. It would be correct, however, to say that forest growth is narrowest on the north-western slopes of the mountain between Engare-Nairobi North and Ol Molog rivers where it is interrupted by fire-created open glades.* The following extract is quoted from Mr. W. F. Baldock's *Preliminary Report on the Kilimanjaro Forest Reserve*, dated May 1924 :—

*There is not, however, a continuous channel formed by glades through the forest; there is a succession of them set at various angles and with narrow strips of forest still existing between them (Elliott *in litt.*).

. . . the western face of the mountain shows the quickest variations from one type of forest to another but the areas concerned are small. That lying between the Lolmolog and Engare-Nairobi North consists principally of open grassland with a belt of a few hundred yards to a mile deep of dry Brown-Olive type forest much scorched by Masai fires and containing no useful timber except a very occasional cedar. Above this area was at one time (as at Endoinet) a fine cedar forest. At present stumps and bare trunks of dead trees of cedar and brown olive are to be seen in the long grass that covers the whole area, but except for some small patches and individual trees the area is almost blank. The cedar is well grown though small and usually free of large branches near the ground; this belt runs irregularly up the mountainside and gradually gives place to isolated *Lovoroni* (*Nuxia platyphylla* Gilg.). The average depth is two miles and the slope gradual; the area is dotted with Masai cattle roads and numerous manyatta dating from 1916 to 1919. Above the cedar belt the *Lovoroni* is found growing singly and in groups of five to ten for a further mile after which there is a series of rounded hills covered with heaths and the valley between with bog grasses. Between the arms of the Engare-Nairobi North River is a patch of cedar growing pure and undamaged by fire giving some indication of the fine forest that must have at one time existed here. In this area though near the upper limit of the cedar forest the trees are big and stand close together yielding fifty tons per acre . . ."

In a further letter, which also he allows me to quote, Bancroft states that on the north-east of the mountain, near Leitokitok, where the forest is shown on the latest map as hardly more than two thousand yards wide, it is in fact five thousand three hundred.

Meanwhile a categorical published statement had been made by Geilinger (1930) that the forest surrounds the mountain in an uninterrupted belt, reduced on the north. Since, apparently, no other author has given a description of the north side, this remark may be amplified by a translation of a subsequent unpublished statement of Geilinger for which I have to thank Gillman :—

Everywhere the lower edge of the northern Kilimanjaro forest lies higher than on the south, at about 1,900 to 2,000 metres (6,200 to 6,500 feet). The upper edge runs generally at about 3,000 metres (9,800 feet) frequently very indistinct . . . merging not into alpine grassland, but direct into a very dense and tall *Macchia* formation, that is to say entirely differing from the south side.* This northern forest is not only considerably narrower than the southern (to traverse it requires only about two hours), but it is generally less dense and is often interrupted by large openings consisting of "high-grass savannah" (probably mostly with *Artemisia*). *Juniperus procera*, entirely missing on the south side, is characteristic. [As it is on the west.—R.E.M.].

*Greenway comments that *Macchia* formation does occur on the south side in patches.

Actually, I think, the upper limit of 9,800 feet for forest on the northern side is too high, at any rate in places. Recent fires coming down from the moorland had done so much destruction that when Mrs. Moreau and I were working the area above Engare Rongai (just west of Leitokitok) in 1938 we recorded our opinion that true forest remained only in shreds and patches above about 8,000 feet, though charred cedars (*Juniperus procera*) showed what had been lost. The process there had been the same as described by Baldock for the west side.

Thus it is clear that Engler's statement about the break in the forest is wrong and that the breadth of the actual forest belt as depicted on even the latest maps is equally wrong in the other direction. But a process has started, evidently in very recent historical times, perhaps only in the last fifty years, that will make Engler's erroneous statement come true unless protection is effective.

In sum, it appears that while the forest belt is still complete, the barrier it presents to the movement of non-forest animals up and down the mountain is less on the north-west than anywhere else except perhaps the north-north-east; and at the present time it is probably less effective than it has ever been in the past. This means that there has been until very recently little prospect of interchange between mammal populations on the moorland and those of the open country surrounding the foot of the mountain.

Moorland fires are probably an important ecological factor on both Kilimanjaro and Mount Kenya. There seems no doubt that they frequently are not due to human agency. Elliott (*in litt.*) mentions seeing a fire started by lightning on Ruwenzori; and Greenway tells me that he has seen isolated patches of grass burnt in such a way and in such situations on the saddle between Kibo and Mawenzi as to make it virtually certain that combustion had been spontaneous. This would have been facilitated by the extreme intensity of the radiation and dryness of the air (see Meyer, 1900, page 149). What was presumably a stable relationship between forest ring and moorland has certainly shown signs of breaking down in recent years, especially on the north through fire on the upper side of the forest. Is this due to a new factor, man's agency in causing fires on the moorland, or is a drier climate to blame?

Bamboo (*Arundinaria alpina*) is nowhere mentioned in the literature of Kilimanjaro; and the general impression is that none exists there—a striking contrast to Mount Kenya. This is not, however, wholly true. To the Tanganyika Forest Department "one patch is known, which is scarcely fifteen acres in extent and is situated at the extreme top edge of the forest on the right bank of the Kitenden River on the north of the mountain" (Bancroft *in litt.*). Actually there may be some more bamboo on Kilimanjaro. Elliott *in litt.* has reason to believe there is some on the north-west: and C. R. V. Bell

has stated (communicated by L. M. Fernie) that there is a very narrow bamboo belt at about 9,000 feet above Leitokitok. He adds: "I remember very clearly that the bamboos had been crushed by elephants".

Meyer has stressed the existence of alpine desert starting on Saddle plateau at about 14,500 feet and comprising all from that level upwards. Gillman (1923) has commented that its present surface is due to "desert weathering". Its desertic nature is very pronounced though it is in parts not so devoid of plants, both ephemeral and perennial (of specialized habit) as, for example, parts of the Libyan Desert known to me. Mackinder in the discussion on Gillman's paper (*Geog. J.* 61, 23) has already commented that there is no similar alpine desert on Mount Kenya. Instead, as Mackinder pointed out, on Mount Kenya "you get domed bushes with rat paths between them, and that vegetation extending to within a few hundred feet of the ends of the glaciers".

Another point Mackinder made (*loc. cit.*) was that "whereas on Kenya you go right out of the forest and some way through the zone of bush heath before you reach the great valleys which are studded all over with thousands of giant groundsels and giant lobelias", he had gained the impression from photographs that on Kilimanjaro these plants "were mixed in the upper edge of the forest". This doubtless arises from confusion between *Lobelia giberroa* Hemsl., which is a species of the forest edge and of openings in the forest, and *L. deckenii* Hemsl. which is no less a plant of the open moorlands than are *L. telekii* and *L. keniensis* on Mount Kenya. Similarly *Senecio cottonii* Hutch. and Taylor is a purely moorland species, recorded by Greenway up to 14,800 feet—Geilinger (unpublished) agrees—and even 15,000 feet in exceptionally sheltered spots. Another giant groundsel, *S. kilimanjari* Mildbraed, overlaps the lower edge of *S. cottonii* at about 12,000 feet, and the two species cannot safely be distinguished except when in flower. *S. kilimanjari* is characteristic of the lower, bushy part of the moorland, and is the species photographed by Greenway with the characteristic local sunbird on top (Moreau 1936, plate 4). Lower still, in the forest belt and forest patches from 7,000 feet upwards, occur two other giant groundsels, *S. johnstonii* Oliver and an unnamed species, alongside *Lobelia giberroa* and the so-called *L. volkensii* Engl., which latter may not really be distinct. Greenway has found *S. johnstonii* exceptionally up to 10,700 feet, where there was a single one in a stand of *S. kilimanjari*. There has been much confusion* about these spectacular features of the Kilimanjaro vegetation and I am grateful to Greenway for enabling me to elucidate them.

*Even by botanists. The photograph labelled *S. johnstonii* by Hitchcock (fig. 103 in "A botanical visit to South and East Africa", *Explorations and Field-work of the Smithsonian Institution in 1930*) is of either *S. cottonii* or *S. kilimanjari*. In Geilinger (1930) the *Senecio* in fig. 121, which is called *S. johnstonii* on page 110, is, according to Greenway, either *S. kilimanjari* or *S. cottonii*, and the *Lobelia* on fig. 118 is probably not *giberroa*. Good photographs of the Giant *Senecios*, critically named, have been provided by Schlieben, H. J., "Die Riesengreiskraut-Gewächse des Kilimanscharo", *Natur und Volk*, 67, 602-608 (1937), but he gives the range of *S. cottonii* as up to 5,000 metres—over 16,300 feet. This is much too high.

The distribution of the epiphytic orchids on Kilimanjaro is a point that is of personal interest to me though hardly relevant to the present discussion. It is surprising that they appear to be exceedingly rare in the main forest belt of the south side, where the wet climate and dense growth of trees, loaded with moss, lichen and ferns, would seem especially favourable. In fact, however, no species have so far been found above about 6,000 feet, except that the tiny *Polystachya confusa*, only about two inches high and with rose-pink flowers, appears at the edge of the forest belt about 9,000 feet. It may be that epiphytic orchids are better distributed in the drier forests of the north and west. The richest localities are evidently the river gorges on the south side: but the entire list for Kilimanjaro, so far as we know it at present, while a little longer than that for Mount Kenya, is altogether poorer than that of the ancient crystalline blocks, Usambara and Uluguru.

THE MAMMALS

Lönnberg in Sjöstedt (1910) lists an imposing number of mammals, including those obtained by the Swedish expedition and those of all previous workers; but on analysis the list is found to consist mainly of species that belong to the foothills and the surrounding plains, which on the west, near Engare-Nairobi, rise to over 5,000 feet above the sea. Hardly any specimens could be recorded above 6,000—why the Swedish expedition did not devote more attention to higher altitudes is not apparent—and the position has not been much improved in the thirty years since Lönnberg wrote. Mr. R. W. Hayman has been good enough to verify that the only published records since 1912 are thirteen species from Rombo (collected by Robin Kemp) in a paper by Oldfield Thomas (*Ann. Mag. Nat. Hist.* (8) 6, 308-16, 1910), and three incidental records by Kershaw (*Ann. Mag. Nat. Hist.* (9) 11, 592, 1923) from a collection made in various parts of Tanganyika by the Game Department. Of all these sixteen records only two are from as high as Bismarck Hut, at the upper edge of the forest.

The present position is that we do not seem to have a single authenticated and properly identified specimen of a mammal from the moorland above 9,000 feet and but few from above 6,000 feet. For the moorland mammals nothing but sight-records exist and it is fortunate that these have recently been reinforced by the observations made by a Game Department expert, Captain Moore. He has generously allowed me to quote his results. He followed the usual route by the huts, Bismarck, Peter's, Kibo and Mawenzi, and found game excessively scarce. This was probably due in the main to disturbance by human beings in this relatively much-frequented area, and partly perhaps to the dryness of the season (February 1944).^{*} Captain Moore was, however,

^{*}However, game may be genuinely scarce on the moorlands. Volken, after spending several days in his march across the northern half of the moorlands, does not mention one single mammal.

able to make important additions to knowledge of the high-altitude mammal fauna by the study of the spoor and dung that were encountered. How much remains to be done, especially among the rodents, may be gathered from the fact that it is still uncertain which the mice are that infest Peter's Hut and that Captain Moore observed heaps of rodent droppings under rocks as high as 16,000 feet—over 7,000 feet above the highest authenticated rodent specimens.

In compiling the attached list I have combined the information available in the published sources, drawn upon Moore's notes and also used a list of the British Museum identifications kindly given me by Mr. B. Cooper for specimens collected by him.

I have tried to exclude from the list species that are essentially of the plains or the foothills and that may be expected to reach their upper limit at about the lower edge of the main forest belt, though occasionally they may penetrate the glades. Among those specimens which I have excluded on these grounds are the following, several of which have had their type-locality given as "Kilimanjaro": hedgehog, *Atelerix pruneri kilimanus* Thomas (originally recorded as *Erinaceus hindei* Thomas); bats, *Rhinolophus deckenii* Peters and *R. lobatus* Peters; shrews, *Crocidura gracilipes* Peters; honey-badger, *Mellivora capensis sagulata* Hollister; mongoose, *Atilax paludinosus rubescens* Hollister; guenon monkey, *Cercopithecus aethiops johnstonii* Pocock; rodents, *Rattus coucha hildebrandti* Peters, *Otomys irroratus elassodon* Osgood, and *Grammomys* (*Thamnomys*) *surdaster surdaster* Thomas and Wroughton.

SHREWS.

Crocidura monax Thomas. Type locality 6,000 feet, Rombo. Nothing stated about its ecology but possibly montane since the species occurs at the upper edge of the forest in Uluguru (Allen and Loveridge, 1927).

Crocidura fumosa subsp. Specimens from 6,500 feet are recorded as *C. fumosa* by Lönnberg as well as specimens from acacia country at Engare-Nanyuki. The type locality of the typical sub-species is at 8,500 feet on Mount Kenya and the range is central Kenya at high altitudes. Another sub-species, *C. f. schistacea* Osgood, has been described from a locality in Ukamba, nearer to Kilimanjaro. Kilimanjaro specimens might be either of these sub-species—or neither. Pending further information about their status on Kilimanjaro the population there is regarded as montane.

Crocidura martiensseni Neumann. Type locality above Marangu, 6,000 feet. Omitted from Lönnberg's list, presumably through inadvertence.

BUSHBABY.

Galago crassicaudatus panganiensis Matschie. Lönnberg records it as "very common in the lower parts of the forest" on Kilimanjaro (but on Mount Meru up to the top of the forest).

MONKEYS.

Colobus polykomos caudatus Thomas and *Cercopithecus mitis kibonotensis* Lönnberg. Probably both the *Colobus* and this "Blue" (Sykes') monkey extend well up through the forest but there is no exact information.

CIVET.

Civettictis civetta subsp. This has only been collected up to about 6,000 feet (Cooper), but it apparently wanders right up on the moorland where Moore saw dung as high as 15,000 feet. The sub-species is probably *C. c. schwarzi* Cabrera, which has a wide range on the eastern side of Africa.

GENET.

Genetta tigrina stuhlmanni Matschie. Johnston recorded this species "up to 7,000 feet". Specimens collected by Cooper near Marangu, at about 6,000 feet, have been named *stuhlmanni*.

MONGOOSE.

Myonax sanguineus ibeae Wroughton. Recorded by Lönnberg but only for Kibongoto, i.e. at ca. 5,000 feet, and recently collected by Cooper at about the same altitude: but by analogy with Mount Kenya it is possible that this predator is a member of the montane forest community.

STRIPED POLECAT (GREATER WEASEL; ZORILLA; "AFRICAN SKUNK").

Ictonyx striatus subsp. Collected only up to 6,000 feet (Cooper), but, by analogy with Mount Kenya, may go far higher.

SERVAL CAT.

Felis serval ? *hindei* Wroughton. Moore recorded spoor of this species up to 12,000 feet and dung up to 15,000 feet.

LEOPARD.

Felis pardus pardus Linn. Johnston thought that leopard did not ascend to more than 8,000 feet. Meyer, Volkens and Lönnberg have none of them recorded evidence of leopard any higher, yet there is no doubt that the leopard penetrates to the moorland and beyond. In 1926 Latham reported the amazing discovery of the desiccated body of a leopard on the crater rim at the spot now called "Leopard Point". Photographs of it have been published both by Latham and by Tilman (1937). Moore notes that the carcass was a small one, either of a young beast, or even of a serval, as Reusch thinks.

In 1943 E. Robson (*East African Standard*, 19th November) has reported that "a second leopard skeleton has recently been found on the crater floor below Leopard Point, where the remains of the original leopard are still visible".

These two carcasses may be the remains of animals that climbed up the snows of Kibo at an interval of several scores or hundreds of years, yet it is difficult to imagine what impulse can have actuated the leopards to make this journey at all. The only food that I can conceive of occurring on the snows is the bodies of migratory locusts which are said to pass at those great heights. It is likely that a hungry leopard would find locusts palatable—it does not disdain such small food as mice—and might even have misguidedly followed them up the slope of Kibo to the top.

TREE DORMOUSE.

Graphiurus (Claviglis) murinus isolatus Heller. Named on Abbott's specimens from 5,000 feet. This is doubtless the dormouse Johnston figures and mentions that he found in forest at 6,000 feet.

STRIPED GRASS MOUSE.

Lemniscomys striatus ardens (Thomas). Type came from 6,000 feet. This is the *Arvicanthus pulchellus* of Lönnberg's list. A species of grassy glades.

KUSU (RAT).

Arvicanthus sp. It is difficult to understand why Lönnberg uses the name *A. neumanni* Matschie (i.e. *A. abyssinicus neumanni*, type locality Kondoa Irangi) for the solitary specimen "rescued from the claws of a hawk" on the "mountain meadows" at 10,000 feet. He expressly states that the Kilimanjaro specimen differs from *neumanni* in having the underparts rusty instead of white washed with grey.

FOUR-STRIPED GRASS MOUSE.

Rhabdomys pumilio diminutus (Thomas) (formerly *Arvicanthus*). Recorded by Lönnberg on Volken's authority and has since been collected at Bismarck Hut (Hayman *in litt.*). It was doubtless this species which Mrs. Moreau and I repeatedly noticed in the moorland at the upper edge of the forest (ca. 9,000 feet) on the north side of Kilimanjaro. *R. p. diminutus* has been collected as high as 10,700 feet on Mount Kenya and 12,000 feet on Elgon.

SHORT-HAIRED RAT.

Rattus (Praomys) tullbergi jacksoni De Winton. Recorded only from low altitudes but it probably goes well up, as on Mount Kenya.

PIGMY MOUSE.

Mus (Leggada) triton murilla (Thomas). No actual record on Kilimanjaro above 6,000 feet but, as it is a grass mouse that on Mount Kenya ascends to at least 8,800 feet in the glades, it may do the same on Kilimanjaro.

HARSH-FURRED MOUSE.

Lophuromys aquilus aquilus (True). Type came from 8,000 feet. Also collected at Bismarck Hutt (Hayman *in litt.*). A species of glades.

MOUSE.

Dendromus nigrifrons nigrifrons (True). The type came from 5,000 feet. The species may be genuinely montane since it goes to 14,000 feet on Mount Kenya.

GROOVE-TOOTHED RAT (VELDT RAT).

Otomys divinatorum Thomas. Type locality Rombo at 5,300 feet. No evidence whether this is a montane species or not.

MOLE-RAT.

Tachyoryctes daemon Thomas. Type came from 5,000 feet. This is the species previously recorded by Lönnberg as *Tachyoryctes rex ibeanus* Thomas (Hayman *in litt.*); on Kilimanjaro only at low altitudes but on Mount Meru in "the uppermost part of the rain forest".

PORCUPINE.

Hystrix galeata subsp. Moore records spoor and dung at 9,500 feet; T. W. Kirkpatrick (personal communication) found a quill at 11,500 feet.

SQUIRRELS.

Heliosciurus rufobrachium undulatus (True).

Paraxerus ochraceus aruscensis Pagenstecher (probably this is what Lönnberg recorded as *Funisciurus ganana* Rhoads).

Paraxerus byatti byatti (Kershaw).

These are all forest species of which at least the first two may not go high.

TREE HYRAX.

Dendrohyrax validus validus True. Johnston and Lönnberg have recorded these to the upper limits of the forest.

ELEPHANT.

Loxodonta africana subsp. Elephants travel right up through the forest belt and have repeatedly been seen on the moorland. Meyer thought that they went as high as the *Panicum* (grass) and *Cyperus* (rush), say 11,500 feet, but not to 13,500 feet. Johnston had previously recorded them at 13,000 feet. Moore has proved that they occasionally go higher still, to about 16,000 feet, for he found the "bones of an elephant, dead for many years, under one rock shelter, the largest, situated a few hundred yards north-east of Mawenzi Hut".

Reusch (*in litt.*) states that the moorland is frequented by two herds in the dry season. One, the eastern, comes up from the Rombo-Useri section, the other, from Ol Molog in the north-west, by way of the Shira plateau.

BUSH-PIG.

Potamochoerus porcus daemonis Major. Moore observed spoor of bush-pig or wart-hog at 9,000 feet. Cooper has collected the former in forest glades between 6,000 and 9,000 feet.

DUICKERS.

Cephalophus harveyi harveyi Thomas. The type came from near the south-east base of Kilimanjaro, at Kahe, and the species probably ranges well up into the forest.

Cephalophus spadix True. A species about which little is known. In the original description its range is given as "high altitudes on Mount Kilimanjaro, frequenting the highest points" (True, 1890). This is patent nonsense as it stands; one is left to guess whether the words "highest points" should be followed by "of the forest" or "of the moorlands". I think it is a forest mammal: for it has also been collected in the West Usambara mountains (Hayman *in litt.*).

DIKDIK.

Rhynchotragus kirkii subsp. Johnston has an illustration of a dikdik killed at 11,000 feet, but not preserved, which seems undoubtedly to be *R. kirkii* and he thought it went up to 14,000 feet in the dry season. We do not know whether this was on native evidence or whether perhaps he saw dung. Lönnberg includes this species for the mountain, quoting Abbott as authority, but no specimen of Abbott's is listed by Hollister. Swynnerton (*Trans. R. Ent. Soc. London*, 84, 537) lists *R. k. hindei* (Thomas), type locality Kitui, for "Kilimanjaro", which may mean only the district.

SUNI (DWARF ANTILOPE).

Nesotragus moschatus moschatus von Düben. Sjöstedt's note about this species is confused: "common in the steppe where they seek shelter among the dense growth of bushes all the way up in the rain forest". Swynnerton (*op. cit.*) certainly regards this sub-species as belonging to forest or "closed bush". It occurs on the coast and perhaps does not ascend the mountain to any great height. Swynnerton retains the name *N. m. kirchenpaueri* Pagenstecher, type locality Arusha, for the Kilimanjaro suni, but Allen sinks this in the typical form.

? REEDBUCK, CHANLER'S.

Redunca fulvorufula chanleri (W. Rothschild). Meyer records "signs of a small antelope" at 13,000 feet. I several times saw small antelopes, which I thought were Chanler's reedbuck, on the north side

of the mountain above the forest, at 9,000 to 11,000 feet. Moore thinks the one he saw at 9,000 feet belonged to this species and he saw what appeared to be dung of it up to 15,000 feet.

KLIPSPRINGER.

Oreotragus oreotragus subsp. At 3,000 metres (9,800 feet) Gillman (1923) has a sight record of a klipspringer, which was, he tells me, identified by his companion, Mr. F. J. Miller. Moore saw a single specimen at 12,500 feet. It may belong to the sub-species *schillingsi* Neum., described from Longido.

BUSHBUCK.

Tragelaphus scriptus massaicus Neum. Recorded for the mountain, they may go higher up into the forest, as on Mount Kenya.

BUFFALO.

Syncerus caffer caffer (Sparman). Johnston (page 354) records these up to 14,000 feet. Some mistake in the altitude might be suspected since on page 393 he states that "buffalo occur commonly in the forests up to 14,000 feet", an altitude that is far above the timber line. Probably, however, there is some copying error in the second statement. In the experience of Reusch, "the buffalo come from the northern side up to the saddle and stay sometimes for many days on the moorlands after having their salt higher up".

RHINOCEROS.

Diceros bicornis bicornis (Linnaeus). Not recorded for Kilimanjaro except round the base, but Mrs. Moreau and I know from personal experience that they are common at about 9,000 feet on the lower edge of the moorlands on the north side. It seems certain that they do not frequent the wet south side in the same way.

ELAND.

Taurotragus sp. Eland have repeatedly been observed above the forest belt on Kilimanjaro and some are presumably resident there. They appear consistently to ascend higher than any other mammals. Gillman (1923) has what appears to be the highest record of their actual feeding, a herd of five browsing on the last stunted patch of *Helichrysum* to be seen, at about 4,500 metres (15,000 feet) on the saddle. (Doubtless the "kudu" Johnston recorded as travelling up to 14,000 feet were eland.) Meyer saw fresh spoor at 15,250 feet, but recent records surpass these.

Moore writes of "large quantities of eland dung at 16,000 feet, well above Mawenzi Hut, where there is no vegetation except a single swampy patch of coarse grass. The beasts evidently go right up beyond the stream to the edge of the scree, which forms part of the wall of the higher peaks of Mawenzi; salt licks and rock shelters here being the attraction. These rock shelters are presumably used as protection against storms as it can be

seen that the animals bunch together on the western side''. H. F. I. Elliott also tells me that he has noticed the convergence of eland tracks towards the western base of Mawenzi. Also Moore found traces of eland "quite close to" Kibo Hut though the only attraction possible appeared to be the salt which encrusted the pebbles under the rock shelters.

It may be that the Kilimanjaro eland are *T. oryx pattersonianus* Lydekker, the sub-species prevalent throughout Kenya and Tanganyika. The moorland animals give the impression of being large and are noticeably thick-haired. Some observers have suspected them to be a form of giant eland, *T. derbianus*; but this seems most unlikely, on both ecological and geographical grounds.

DISCUSSION OF THE MAMMALS

As previously stated, the Kilimanjaro mammal fauna is altogether too imperfectly known for any complete comparisons to be possible. For the same reason the interesting questions of endemism and of subspecific variation with altitude on the mountain cannot be properly discussed. We know nothing of the mammals of the Pare mountains, the nearest on the south, and too little of Mount Meru, the nearest on the west. It may, however, be useful to consider the available information briefly, in order especially to show what species might be expected to turn up.

The Moorland.—On Mount Kenya the moorland fauna consists of the following species, apart from stragglers. All those marked * go well above the bushy lower half of the moorland:—

Two shrews, *Crocidura allea** and *Surdisorex polulus*.

Two groove-toothed rats, *Otomys orestes** and *Otomys tropicalis*.

A mole-rat, *Tachyoryctes rex*.

A "mouse", *Dendromus insignis**.

A rock-hyrax, *Procavia johnstoni**.

A duikerbok, *Sylvicapra grimmia**.

Eland, *Taurotragus oryx pattersonianus**.

Leopard, *Felis pardus**.

Striped polecat, *Ictonyx striatus*.

It will be seen that the Mount Kenya moorland has quite a rich fauna of small mammals—two species of shrew and four of rodents. (*Dendromus*, notwithstanding its name, is not a tree mouse but is said to frequent the mole-rat runs.) Of the corresponding species on Kilimanjaro we are still almost totally ignorant. Against the Mount Kenya list of four rodents and two shrews we have on Kilimanjaro certain knowledge of only one of the rodents, the Four-striped Grass-mouse. But Reusch notes that shrews and mole-rats are common throughout the moorland, and Moore has observed rodent dung under a rock as high as 16,000 feet.

The rock-hyrax on Mount Kenya is a montane sub-species of a very wide-spread species that occurs, for example, in Mwanza. Hyraxes make such far-carrying noises that probably if they lived in any numbers on the Kilimanjaro moorland their presence would be well known. But Dr. Reusch tells me he thinks there are some round the east of Mawenzi, which is probably the least explored part of the whole mountain.

The apparent difference between the antelopes of the two moorlands is noteworthy. On both Kilimanjaro and Mount Kenya the eland is present, but while on the former both klipspringer and Chanler's reedbuck occur (subject to confirmation by specimens), on the Mount Kenya moorland there is only one small species of antelope, a duikerbok, *Sylvicapra grimmia altivallis* Heller, a moorland sub-species of a widespread animal that has also established itself on the Elgon moorlands. It is very remarkable that with the facilities afforded by the open grassland corridor Chanler's reedbuck and klipspringer, which both live round the base of Mount Kenya, should have failed to establish themselves on the moorland there, while they seem to have done so on the Kilimanjaro moorland without the same easy means of ingress.

It is probably true that the antelope population of the Kilimanjaro moorland, with its area of about two hundred square miles, is limited to a few score individuals of each species at the most. Such a population, in such a latitude, might be expected to evolve distinctive characters in a comparatively short time if isolation has indeed been effective.

The Forest Belt.—The fauna falls into two groups, one of which inhabits glades and the other of which is arboreal or is found only where the trees are dense and tall. On Mount Kenya the lists of the principal mammals of these two types are as follows, those which ascend to the upper part of the forest belt being marked † :—

Mammals of full forest—

Shrew, *Sylvisorex granti*†.

Galago, *G. crassicaudatus*.

Two monkeys, *Cercopithecus mitis*† and *Colobus polykomos*†.

Two squirrels, *Heliosciurus* sp. and *Paraxerus ochraceus*.

Dormouse, *Graphiurus murinus*†.

Crested "rat", *Lophiomys ibeanus*.

Tree mouse, *Rattus (Hylomyscus) denniae*†.

Rat, *Rattus tullbergi*†.

Tree hyrax, *Dendrohyrax arboreus*†.

Giant forest-hog, *Hylochoerus meinertzhageni*.

Two duikers, *Cephalophus harveyi* and *C. nigrifrons*†.

Bongo, *Boocercus eurycerus*†.

This gives as the purely arboreal community one galago, two monkeys, two squirrels, one tree-house and one tree-hyrax, of which the galago and the two squirrels drop out before the upper zone of the forest.

Other mammals—

Three shrews, *Crocidura f. fumosa*, *C. occidentalis* and *C. turba zaodon*†.
A mongoose, *Myonax sanguineus*.

A genet, *Genetta tigrina*.

The leopard, *Felis pardus*†.

Six rats and mice, *Lemniscomys striatus*†, *Lophuromys aquilus*†, *Oenomys hypoxanthus*†, *Rhabdomys pumilio*†, and *Mus* (*Leggada*) sp.

The bush-buck†.

The rhino†.

The buffalo†.

The elephant†.

For Kilimanjaro comparable lists cannot at present be prepared. Several of the mammals in the specific list given above for that mountain are included only provisionally. In the absence of field-notes we do not know whether mammals known only from about 5,000 and 6,000 feet belong to the plains and foothills or whether they are truly members of the forest belt that have been encountered at their lower limit.

Of the forest mammals the galago, monkeys, squirrels, dormouse and short-haired rat (*R. tullbergi*) of Mount Kenya all appear on Kilimanjaro. The tree hyrax is replaced by another species. Each mountain has two forest duikers: Harveys' occurs on both, but on Kilimanjaro the little-known Abbott's duiker, *Cephalophus spadix*, takes the place of the Black-fronted, *C. nigrifrons* of Mount Kenya. There are three notable absences from the Kilimanjaro list, the "Crested Rat", *Lophiomys ibeanus* (which is not a rat), the Giant Forest-hog and the bongo. At any rate the last two of these are not likely to be awaiting discovery unless the north-west side of the mountain is so imperfectly known that a large area of bamboo is uncharted. On the other hand, Kilimanjaro may be one up in squirrels, with a third species, *Paraxerus byatti*, but it is still not known whether this is really montane.

The mammal community of the forest glades is similar in composition on both mountains, if the three shrews tentatively included in the Kilimanjaro list all belong to it, but two of the shrews species are different, only *Crocidura fumosa* occurring on both mountains. The rodent species are the same on both, except that Mount Kenya adds *Oenomys hypoxanthus*.

THE BIRDS OF THE MOORLANDS

The results of collecting on Kilimanjaro, 1932 to 1935, were collated with previous records by Moreau (1936). The whole of the information at that time available came from the south-east (from the usual route by the huts), the south (from collections above Kibosho and one brief trip by Moreau above Machame) and from the west (a collection in the forest belt above Engare-Nairobi). Some records for the north side were subsequently obtained and

published (Moreau 1939). Since then no additions have been made to the ornithology of the mountain so far as I know except that the occurrence of lammergeyers has been confirmed by Elliott and by Moore with as good a sight record as one could hope to get.* Also, augur buzzards, which are seen over the moorland to at least 14,000 feet, should be added to my published lists; through inadvertence they were there quoted only for lower altitudes.

By now the list of birds that may be presumed to be resident on Kilimanjaro is fairly complete. All the work of the last fifteen years has added only five forms to the previous list. But there is most certainly need for much more study of the birds on the mountain. Firstly, as will be seen from subsequent discussion, there are one or two absences from the moorland list that are very surprising and that one is unwilling to accept, and there is also one species, the alpine swift, the sub-species of which is unknown. Secondly, we know far too little about the breeding seasons. Those of the moorland birds are hardly known at all and those of the forest belt are complicated by the apparent change with the rainfall regime as one goes round the mountain. Thirdly, there is no reason why the list of visitors and of stragglers to the higher parts of the mountain should not be added to almost indefinitely. I had a remarkable example of this on Mount Kenya at the upper edge of the forest (10,500 feet) when in a single afternoon two such unexpected birds as a hammerkop and a crowned hornbill (*Lophoceros melanoleucos*) both appeared. On Kilimanjaro I have seen European swallows and a kite (*Milvus migrans*) at about the same height. In the same category I should put Neumann's record of the goshawk (*Melierax poliopterus* Cab.) at Kifinika Hill (about 9,500 feet). Provisionally I do the same with his records from the same area of the pipit (*Anthus richardi lacuum* Meinertz.), and the sunbirds (*Nectarinia tacazze* Stanl.,† *Nectarinia famosa* subsp. and *Drepanorhynchus reichenowi* Fshr.).‡ In the forty-five years since Neumann's visit no one else seems to have encountered these species at this height above the forest belt and I suspect that the sunbirds may actually have been collected at the upper edge of the timber line and not from the moorland, even in its most bushy lower zone. The pipit presents greater difficulties. Ecologically there would be every reason to expect a resident pipit on the moorland, but it is doubtful whether even so adaptable a species as this pipit, with a proved breeding range from sea-level in Zanzibar to the Mau plateau at 8,000 feet, could extend it to 10,000 feet, especially since the climatic difference would be exaggerated by

*The Game Department had also a report from Baron von Fürstenberg that he had an immature lammergeyer which had been taken on Kilimanjaro and had escaped after being photographed. There were no details of locality or other circumstances.

†Since the above was written Elliott informs me that he has found *N. tacazze* common (December 1944) close to where Neumann did. A good example of the interesting results that further observations on Kilimanjaro may be expected to yield.

‡Neumann, O., *J. Orn.*, 48, 185-228, 253-313. I have given reasons (Moreau, 1939) for rejecting entirely another record, *Dryoscopus pringlii* Jacks., included for Kifinika by Sjöstedt ostensibly from Neumann.

the eco-climatic extremes encountered by a ground-nesting bird. Anyway, for the time being it seems better to regard this species as not a moorland resident.

On the north side of the mountain, above Engare Rongai, where the forest belt has been eaten away by fire from both sides until now it extends solidly only from about 6,500 to 8,000 feet, we found in February 1938 that a number of the foothill species were established in the luxuriant bushy "macchia" that has succeeded the forest. We noted *Francolinus squamatus maranensis* Mearns, *Cossypha caffra iolaema* Rchw., *Colius striatus chyulu* van Som., *Gymnogenys t. typicus* (Smith), the Black-shouldered Kite, *Elanus c. caeruleus* (Desf.), and *Coccygria melanotis kilimensis* Sharpe. Moreover, the starling (*Onychognathus morio rüppellii* Verr.) was breeding in a rock-face at 9,500 feet. None of these was above the true timber-line—the black-shouldered kite was actually on a relict tree far removed from any other—and I do not think they can be regarded as members of the moorland association at any rate at present. It will be interesting to see if their status changes in subsequent years.

There are three other birds, the yellow flycatcher (*Chloropeta similis* Richmond), the scrub-warbler (*Sathrocercus cinnamomeus rufoflavus* Rchw. and Neum.), and the stonechat (*Saricola torquata axillaris* Shelley), that have been recorded up to 10,000 feet* and that I hitherto have included in the moorland fauna. On further consideration I think they are better omitted. They are birds of the forest glades and of thick scrub, which do not in fact seem to go appreciably above the highest tree growth; and it would be misleading to include them in Table 2. It is possible that the Black Mountain-duck (*Anas sparsa*) should be credited to the Mount Kenya moorlands. It has repeatedly been observed on the small lakes there; but pending further information of its status there it is omitted from the table. I am taking the same course with the nightjar *Caprimulgus poliocephalus* Rüpp. Those species marked (x) in Table 2 are confined to the lower part of the moorland and records that are only by sight are bracketed.

TABLE 2.—Comparison of the moorland avifaunae

Species	Kilimanjaro sub-species			Mount Kenya sub-species
Buzzards:				
(x) <i>Buteo oreophilus</i> ...	...	<i>oreophilus</i> Hart. and Neum.	...	<i>oreophilus</i>
<i>Buteo rufofuscus</i> ...	...	<i>augur</i> (Rüpp.)...	...	<i>augur</i>
Lammergeyer:				
<i>Gypaëtus barbatus</i> ...	...	(? <i>meridionalis</i> Keys & Blas.)		(? <i>meridionalis</i>)
Francolin:				
(x) <i>Francolinus shelleyi</i> ...	...	—	...	<i>theresae</i> Meinertz.
Pigmy Crane:				
(x) <i>Sarothrura lineata</i> ...	...	—	...	<i>antonii</i> Mad. and Neum.
Snipe:				
(x) <i>Capella nigripennis</i> ...	...	—	...	<i>nigripennis</i> (Bp.)

*Specimens of the flycatcher and of the stonechat are recorded by Oberholser (1905), at 10,000 feet, but as other species, that are purely forest birds, are recorded from this altitude in the same paper it is clear that the 10,000 feet cannot be taken as connoting the open moorland.

Species	Kilimanjaro sub-species			Mount Kenya sub-species
Eagle-Owl:				
<i>Bubo capensis</i>	—			<i>mackinderi</i> Sharpe
Swift:				
<i>Apus melba</i> (subsp.)	...	...	...	? <i>striatus</i> Meinertz.
Pipit:				
<i>Macronyx sharpei</i>	—			<i>sharpei</i> Jackson
Hill Chat:				
<i>Pinarochroa sordida</i>	<i>hypospodia</i> Shelley	...	...	<i>ernesti</i> Sharpe
Grass-warbler:				
<i>Cisticola hunteri</i>	<i>hunteri</i> Shelley	...	...	<i>prinioides</i> Neum.
Raven:				
<i>Corvultur albicollis</i>	<i>albicollis</i> Lath.	...	...	<i>albicollis</i>
Starling:				
<i>Onychognathus tenuirostris</i>	—			sub-species
Sunbird:				
<i>Nectarinia johnstoni</i>	<i>johnstoni</i> Shelley	...	...	<i>johnstoni</i>
Canary:				
<i>Serinus flavivertex</i>	<i>flavivertex</i> Blanf.	...	...	<i>flavivertex</i>
Seed-eater:				
<i>Poliospiza striolata</i>	<i>striolata</i> (Rüpp.)	...	...	<i>striolata</i>

It will be seen that the Mount Kenya moorland avifauna is much the richer: each of the ten Kilimanjaro species occurs on Mount Kenya, which possesses six more as well. These six may be considered individually:—

- (1) There is some evidence that Shelley's francolin occurs above the forest at any rate on the north side of Kilimanjaro, but confirmation by specimens is necessary.
- (2) and (3) The crake and the snipe both require patches of fresh-water swamp, which are more extensive on Mount Kenya than on Kilimanjaro.
- (4) The eagle owl might still turn up on Kilimanjaro. It is known from Iringa as well as the Kenya highlands and there is apparently no lack of rodents for it on the Kilimanjaro moorland.
- (5) The pipit is a species found at high altitudes throughout the Kenya highlands, including the base of Mount Kenya, and is therefore practically a ready-made colonist for the moorland. There is no species similarly eligible for Kilimanjaro.
- (6) The starling "ought" on geographical and ecological grounds to be on Kilimanjaro, but it is a fairly conspicuous bird and I doubt whether it would have been overlooked for all these years. It is known from Kivu, Uluguru and Njombe as well as Kenya and Abyssinia.

One of the species, *Cisticola hunteri*, occurring on both Kilimanjaro and Mount Kenya is of special interest from an evolutionary point of view. On Mount Kenya the sub-species *prinioides* occurs from 6,000 feet, or lower, up to 15,000 feet, apparently resident throughout and with no appreciable difference. On Kilimanjaro the *C. hunteri* occurring above the forest on the south side are much darker than those occurring below; and for many years the upper ones were called *C. h. hunteri* and the lower *C. h. prinioides*. But when a series was collected on the north side in 1938 it was found that the birds on the upper

side of the attenuated forest belt were hardly darker than those below it until the altitude of 9,500 feet was passed. Specimens from 10,200 feet were definitely darker and a bird from 11,300 feet had the full depth of pigment of typical *C. h. hunteri*. Since there is so complete a transition and the low-altitude birds on Kilimanjaro are not entirely identical with those on Mount Kenya, the latest view is that all the Kilimanjaro birds should be called *C. h. hunteri* and the Mount Kenya *C. h. prinioides* (Lynes in Moreau 1939). On Mount Meru all the birds are *C. h. prinioides*.

Another species, the "seed-eater" (*Poliospiza striolata*), might prove interesting from this point of view. Throughout Kenya and northern Tanganyika the birds bear the name *P. s. striolata*, except that on the Elgon moorland they are sufficiently distinct to have been named *P. s. ugandae* van Som. On the Mount Kenya moorland differentiation has begun (not showing the same trend as on Elgon), but has not gone far enough to warrant a subspecific name. No one seems to have collected a series at high altitudes on Kilimanjaro, where this species goes to over 13,000 feet, and it would be interesting to know whether the highest birds differ in any way from those at say 4,500 feet.

The ten species that make up the moorland bird community on Kilimanjaro, so far as we know it, do not seem to fill all its ecological niches. A plover and a pipit might certainly have been expected. There is no bird that nests and finds its food on the ground except the *Pinarochroa* chat. Of the three accipitrine birds, one buzzard (*B. oreophilus*) probably specializes on the chameleons, and the other, the augur, on the small rodents. Judging by their habits outside the tropics, the lammergeyers would be dependent on the bigger mammals for food in the form of carrion, of bones which are cracked by dropping on a rock, and perhaps of living small buck. The ravens are doubtless complete opportunists, taking anything edible. From experience of these birds elsewhere I should say that they would certainly take an occasional small rodent. But they would not make much impression on the rodent population as a whole and the eagle owl of Mount Kenya, which no one has ever reported on Kilimanjaro, seems "demanded" there. Casts should be looked for in rock-shelters.

The alpine swifts of course feed exclusively on flying insects, and on occasion go right down to the foothills to get them. (Fuggles-Couchman and Elliott have seen them over Moshi township.) On the other hand some species of the swallow tribe not resident on the moorland occasionally forage there. The *Cisticola*, though called "grass-warbler", is a bird of the bushes, going up to a level where the bushes are very scanty and small indeed, and it is exclusively insectivorous. The sunbird (*Nectarinia johnstoni*) is the biggest of its family, with an exceptionally long bill well-adapted to exploring the deeply sunken flowers of *Lobelia deckenii*. It also frequents the *Proteas* a good deal in the lower part of the moorland. Its presence on the spikes of the giant groundsels is no doubt due to the wealth of tiny insects, for most sunbirds depend on this source

of food (or minute berries) as well as nectar. The canary and the *Poliospiza* are, as might be expected, seed-eaters. The former go astonishingly high, beyond any obvious attraction, and they are almost certainly the "golden birds" that have been found dead on one of the Kibo glaciers.

THE BIRDS OF THE FOREST BELT

The forest birds can be divided into those which are dependent on full forest and those which frequent glades and forest edges. As with the mammals, I try to exclude those species, listed below, which are essentially lowland or which reach their upper limit with the cultivation zone at 5,000 or 6,000 feet. Some of them may subsequently be found to qualify as "montane". Those marked (K) and (Kmj.) are species known from Mount Kenya or from Kilimanjaro respectively (at low altitudes) but not from the other mountain.

Accipiter melanoleucos A.Sm., *Astur badius sphenurus* Rüpp., *Gymnogenys t. typicus* (A.Sm.), *Tympanistria t. fraseri* Bp., *Chrysococcyx cupreus intermedius* Hartl., *Bycanistes buccinator* Temm., *Bubo lacteus* (Temm.), *Telecanthura ussheri stictilaema* (Rchw.), *Colius striatus* subsp., *Apaloderma n. narina* Steph., *Pogoniulus biliniatus alius* Friedm. (K), *Buccanodon leucotis* subsp., *Thripias n. namaquus* Licht., *Dendropicos fuscescens (lafresnayi)* subsp., *Anthus* spp., *Suaeheliornis k. kretschmeri* Rchw. and Neum. (Kmj.), *Phyllastrephus cerviniventris* Shelley (Kmj.), *Tchitrea* spp., *Eurillas virens* subsp., *Pycnonotus barbatus* subsp., *Chlorocichla flaviventris* subsp., *Stelgidillas gracilirostris percevali* Neum. (K), *Trochocercus bivitatus* subsp., *Batis molitor puella* Rchw., *Arythropygia hartlaubi kenia* van Som. (K), *Apalis p. pulchra* Sharpe (K), *Sigmodus scopifrons keniensis* van Som. (K), *Lanius collaris humeralis* Stanl., *Parus a. albiventris* Shelley, *Corvus capensis kordofanicus* Laubm. (K), *Nectarinia k. kilimensis* Shelley, *Buphagus erythrorhynchus caffer* Stanl., *Cinnyris r. reichenowi* Sharpe (K), *Cyanomitra verticalis viridisplendens* Rchw. (K), *Phormoplectes insignis ornatus* Granvik (K), *Mandingoa nitidula chubbi* O.-Grant, *Coccyzygia melanotis kilimensis* Neum., *Hypargus niveoguttatus* Peters, *Spermophaga r. ruficapilla* Shelley (K).

One species, *Coracina caesia*, must be added to the lists given for Kilimanjaro by Moreau (1936 and 1939). It was overlooked that Sjöstedt collected a specimen at 6,000 feet above Kibonoto. Another has since been obtained by my collector at about 6,500 feet above Engare Nairobi, and Fuggles-Couchman has got one from the same altitude, above Old Moshi.

In the following tables records not supported by specimens are shown in round brackets. Birds that are known only in the lower part of the forest belt are marked (x); and those not proved, but believed, to form part of the montane forest community, at any rate in its lowest parts, are marked (o). Status and altitude ranges may of course be altered by subsequent observation, especially on the southern half of Mount Kenya and the opposite part of Kilimanjaro. It must be emphasized, too, that the birds of the glades listed in Table 4 find their characteristic distribution in the northern half of each mountain, where the forest is less solid.

TABLE 3.—Birds dependent on full forest

Species	Kilimanjaro		Mount Kenya	
Hawk-eagle:				
<i>Stephanoaëtus coronatus</i> ...	...	<i>coronatus</i> (Linn.)	...	<i>coronatus</i>
Francolin:				
<i>Francolinus jacksoni</i> ...	...	—	...	<i>pollenorum</i> Meinertz.
Pigeons:				
<i>Columba arquatrix</i> ...	...	<i>arquatrix</i> Temm. and Knip.	...	<i>arquatrix</i>
<i>Turturoena delegorguei</i> ...	...	<i>sharpei</i> Salvad.	...	<i>sharpei</i>
Dove:				
<i>Aplopelia larvata</i> ...	...	<i>larvata</i> Temm. and Knip.	...	<i>larvata</i>
Lourie:				
<i>Turacus hartlaubi</i> ...	...	<i>hartlaubi</i> Fsch. and Rehw.	...	<i>hartlaubi</i>
Parrot:				
<i>Poicephalus gulielmi</i> ...	...	<i>massaicus</i> Fsch. and Rehw.	...	<i>massaicus</i>
Hornbill:				
<i>Bycanistes cristatus</i> ...	...	(x) <i>cristatus</i> Rüpp.	...	<i>cristatus</i>
Wood-hoopoe:				
<i>Phoeniculus bollei</i> ...	...	—	...	<i>jacksoni</i> (Sharpe)
Wood-owl:				
<i>Ciccaba woodfordii</i> ...	...	(o) subsp.	...	(x) subsp.
Trogon:				
<i>Heterotrogon vittatum</i> ...	...	(x) <i>vittatum</i> Shelley	...	(x) <i>vittatum</i>
Barbet:				
<i>Viridibucco simplex</i> ...	...	(x) <i>leucomystax</i> (Sharpe)	...	(x) <i>leucomystax</i>
Woodpeckers:				
<i>Campethera taeniolaema</i> ...	...	—	...	(x) <i>hausburgi</i> Sharpe
<i>Mesopicos griseocephalus</i> ...	...	<i>kilimensis</i> Neum.	...	—
Hill-babbler:				
<i>Pseudocalyptra abuyssinicus</i> ...	...	(x) <i>abyssinicus</i> Rüpp.	...	(x) <i>abyssinicus</i>
Bulbul:				
<i>Phyllastrephus fischeri</i> ...	...	(x) <i>placidus</i> Shelley	...	(o) <i>placidus</i>
<i>Stelgidocichla latirostris</i> ...	...	—	...	(o) <i>eugenia</i> Rehw.
<i>Arizelocichla milanensis</i> ...	...	(x) <i>striifacies</i> Rehw. & Neum.	...	—
" " <i>tephrolaema</i> ...	...	<i>nigriceps</i> Shelley	...	<i>kikuyuensis</i> (Sharpe)
Flycatchers:				
<i>Alseonax adustus</i> ...	...	<i>chyulu</i> van Som.	...	<i>pumilus</i> Rehw.
<i>Trochocercus albonotatus</i> ...	...	—	...	<i>albonotatus</i> Sharpe
<i>Batis capensis</i> ...	...	(x) <i>mixta</i> Shelley	...	—
Thrush Family:				
<i>Turdus olivaceus</i> ...	...	<i>deckeni</i> Cab.	...	<i>elgonensis</i> (Sharpe)
<i>Geokichla gurneyi</i> ...	...	—	...	(x) <i>chuka</i> van Som.
" " <i>piaggiae</i> ...	...	<i>kilimensis</i> Neum.	...	<i>kilimensis</i> .
<i>Cossypha semirufa</i> ...	...	(x) <i>intercedens</i> (Cab.)	...	(x) <i>intercedens</i>
<i>Pogonocichla stellata</i> ...	...	<i>guttifer</i> Rehw. and Neum.	...	<i>guttifer</i>
"Warblers":				
<i>Seicercus umbrovirens</i> ...	...	<i>dorcadichrous</i> (Rehw. & Neum.)	...	<i>mackenianus</i> Sharpe
<i>Sathrocercus mariae</i> ...	...	<i>mariae</i> (Mad.)	...	<i>mariae</i>
<i>Apalis cinerea</i> ...	...	—	...	(x) <i>cinerea</i> Sharpe
" " <i>flavicularis</i> ...	...	<i>griseiceps</i> Rehw. and Neum.	...	—
<i>Sylvietta leucophrys</i> ...	...	—	...	(x) <i>leucophrys</i> Sharpe
Cuckoo-shrikes:				
<i>Campephaga quiscalina</i> ...	...	—	...	(x) <i>martini</i> Jacks.
<i>Coracina caesia</i> ...	...	(x) <i>pura</i> (Sharpe)	...	<i>pura</i>
Shrike:				
<i>Chlorophoneus nigrifrons</i> ...	...	(o) <i>nigrifrons</i> Rehw. and mutants.	...	(o) <i>nigrifrons</i> and mutants.
Oriole:				
<i>Oriolus percevali</i> ...	...	—	...	(x) <i>percevali</i> O.-Grant
Starlings:				
<i>Pholia femoralis</i> ...	...	<i>femoralis</i> Richm.	...	—
" " <i>sharpii</i> ...	...	—	...	(x) <i>sharpii</i> Jacks.
<i>Stilbopsar kenricki</i> ...	...	(x) <i>kenricki</i> (Shelley)...	...	(x) <i>kenricki</i>
<i>Onychognathus walleri</i> ...	...	(x) <i>walleri</i> (Shelley)	...	(x) <i>keniensis</i> van Som
Sunbird:				
<i>Cyanomitra olivacea</i> ...	...	(x) <i>neglecta</i> Neum.	...	(x) <i>neglecta</i>

Species	Kilimanjaro		Mount Kenya
Weavers:			
<i>Cryptospiza salvadorii</i> ...	...	<i>kilimensis</i> Sclater & Moreau	(x) <i>ruwenzori</i> W. Scl.
<i>Estrilda atricapilla</i> ...	...	—	(x) subsp.
Finches:			
<i>Poliospiza burtoni</i> ...	...	<i>kilimensis</i> (Richm.) ...	(x) <i>albifrons</i> Sharpe
<i>Linurgus kilimensis</i> ...	...	<i>kilimensis</i> (Rehw. & Neum.)	(x) <i>keniensis</i> van Som.

TABLE 4.—Other birds of the forest belt

Species	Kilimanjaro		Mount Kenya
Duck:			
<i>Anas sparsa</i> ...	...	<i>leucostigma</i> Rüpp. ...	<i>leucostigma</i>
Ibis:			
<i>Lampribis olivacea</i> ...	...	(<i>akeleyorum</i> Chapman)	<i>akeleyorum</i>
Hawk-eagle:			
<i>Lophoaëtus occipitalis</i> ...	...	(o) <i>occipitalis</i> (Daud.)	(x) <i>occipitalis</i>
Buzzard:			
<i>Buteo rufofuscus</i> ...	...	<i>augur</i> Rüpp. ...	<i>augur</i>
Francolin:			
<i>Francolinus squamatus</i> ...	...	(x) <i>maranensis</i> Mearns	(o) <i>maranensis</i>
Kingfisher:			
<i>Megaceryle maxima</i> ...	...	—	(x) <i>maxima</i> Pallas
Bee-eater:			
<i>Melittophagus lafresnayii</i> ...	...	(x) <i>oreobates</i> Sharpe	(x) <i>oreobates</i>
Woodpecker:			
<i>Dendropicos fuscescens</i> ...	...	(o) <i>massaicus</i> Neum.	(o) <i>lepidus</i> Cab. and Heine
Flycatchers:			
<i>Dioptrornis fischeri</i> ...	...	<i>fischeri</i> Rehw. ...	<i>fischeri</i>
<i>Chloropeta similis</i> ...	...	<i>similis</i> Richm. ...	<i>similis</i>
Thrush Family:			
<i>Cossypha caffra</i> ...	...	(x) <i>iolaema</i> Rehw. ...	(x) <i>iolaema</i>
<i>Saxicola torquata</i> ...	...	<i>axillaris</i> (Shelley) ...	(x) <i>axillaris</i>
"Warblers":			
<i>Sathrocercus cinnamomeus</i> ...	...	<i>rufostavidus</i> (Rehw. & Neum)	<i>cinnamomeus</i> (Rüpp.)
<i>Cisticola hunteri</i> ...	...	<i>prinioides</i> Neum. ...	<i>prinioides</i>
Bank-martin:			
<i>Psolidoprocne holomelaena</i> ...	...	<i>massaica</i> Neum. ...	<i>massaica</i>
Shrike:			
<i>Laniarius ferrugineus</i> ...	...	<i>ambiguus</i> Mad. ...	<i>ambiguus</i>
White-eyes:			
<i>Zosterops kikuyuensis</i> ...	...	—	<i>kikuyuensis</i> Sharpe
" <i>eurycricotus</i> ...	...	<i>eurycricotus</i> Fsch. & Rehw.	—
Sunbirds:			
<i>Nectarinia famosa</i> ...	...	<i>aenigularis</i> Sharpe ...	<i>aenigularis</i>
" <i>tacazze</i> ...	...	<i>tacazze</i> Stanl. ...	<i>tacazze</i>
<i>Drepanorhynchus reichenowi</i> ...	...	<i>reichenowi</i> Fsch. ...	<i>reichenowi</i>
<i>Cinnyris mediocris</i> ...	...	<i>mediocris</i> Shelley ...	<i>keniensis</i> Mearns
Weavers:			
<i>Ploceus (Othyphantes)</i>			
<i>reichenowi</i> ...	...	<i>reichenowi</i> Fsch. ...	<i>reichenowi</i>
<i>Nigrita canicapilla</i> ...	...	<i>diabolica</i> Rehw. & Neum. ...	<i>diabolica</i>
Finches:			
<i>Serinus flavivertex</i> ...	...	<i>flavivertex</i> Blanf. ...	<i>flavivertex</i>
<i>Poliospiza striolata</i> ...	...	<i>striolata</i> Rüpp. ...	<i>striolata</i>
<i>Spinus citrinelloides</i> ...	...	(o) <i>hypostictus</i> Rehw. ...	<i>kikuyuensis</i> Neum.

On analysing Tables 3 and 4 we get the comparative results shown in Table 5.

TABLE 5.—*Avifaunae of the forest belts*

	Full forest species		Other Species		Combined	
	Total	Reaching upper edge	Total	Reaching upper edge	Total	Reaching upper edge
Kilimanjaro	32	18	25	19	57	37
Mount Kenya	39	17	26	19	65	36

It will be seen that on present information Mount Kenya has a rather richer montane avifauna than Kilimanjaro but no more species that reach the upper edge of the forest belt. Of the full forest species, twenty-eight are common to both mountains and so are practically all the other species of the forest belt. In five families, the woodpeckers, bulbuls, flycatchers, warblers (genus *Apalis*), and the starlings, the faunae include pairs of vicarious species—although so far as is known at present in four of the pairs the altitudinal ranges of the two members are not quite the same. Amongst the other species of the forest belt the *Zosterops* are shown as vicarious species but future taxonomists may regard them as forms of one species.

Among the remaining birds, the big hornbill seems to go higher on Mount Kenya than on Kilimanjaro but the reverse may be true of the *Cryptospiza*, *Poliospiza burtoni* and *Linurgus*. The additional species possessed by Mount Kenya consist of a francolin, a wood-hoopoe, a thrush (*Geokichla*), a warbler (*Sylvietta*), a cuckoo shrike (*Campephaga*), an oriole and an *Estrilda*. Except the thrush, these are all characteristically western forms, not known anywhere in the north-eastern quarter of Tanganyika Territory, in which Kilimanjaro is situated: and Mount Kenya may be said to owe them to its position as the eastern edge of the Kenya highlands. The appearance of a form of *Geokichla gurneyi* on Mount Kenya as well as *G. piaggiae* is remarkable because elsewhere these species are vicarious. The appearance of *G. piaggiae* on Kilimanjaro is even more astonishing, since the neighbouring mountains to the north, east, west and south, Chyulu, Teita, Meru, Pare, are all inhabited by forms of *G. gurneyi*.

The absence of the flycatcher (*Trochocercus albonotatus*) from Kilimanjaro is most difficult to understand, since it occurs on most of the Tanganyika mountains to the south as well as through the Kenya highlands. Another point of interest is that the proportionate status of the colour mutants of *Chlorophoneus nigrifrons* on the two mountains seems to be the same, with the flame-breasted form (*abbotti*—*elgeyuensis*) about as common as the golden-breasted (typical *nigrifrons*), and with the fawn-breasted (*münzneri*) very rare.

The bird community of the full forest can be analysed as follows for species common to both mountains and for vicarious species. Those species which

on one mountain or the other go high are marked H :—

BIRDS OF THE GROUND STRATUM

Species of mixed diet : *Aplopelia larvata* H, *Cyanomitra olivacea*, *Nigrita canicapilla* H.

Mainly insectivorous species : *Geokichla piaggiae* H, *Cossypha semirufa*, *Pogonocichla stellata* H, *Sathrocercus mariae* H.

Seed-eating species : *Cryptospiza salvadorii* H, *Linurgus kilimensis* H.

BIRDS OF THE MID-STRATUM

Species of mixed diet : *Pseudoalcippe abyssinicus*, *Turdus olivaceus* H.

Carnivorous species : *Ciceaba woodfordii*.

Insectivorous species : *Mesopicos griseocephalus* H—*Campethera taeniolaema*, *Phyllastrephus fischeri*, *Alseonax adustus* H, *Batis capensis*—*Trochocercus albonotatus* H, *Seicercus umbrovirens* H, *Apalis flavigularis* H—*Apalis cinerea*.

Fruit-eating species : *Arizelocichla tephrolaema* H, *A. milanjensis*—*Stelgidocichla latirostris*.

Seed-eating species : *Poliospiza burtoni* H.

BIRDS OF THE CANOPY

Species of mixed diet : *Cinnyris mediocris* H.

Carnivorous species : *Stephanoaëtus coronatus* H.

Insectivorous species : *Heterotrogon vittatum*, *Chlorophoneus nigrifrons*, *Cora-cina caesia* H.

Fruit-eating birds : *Columba arquatrix* H, *Turturoena delegorguei* H, *Poicephalus gularis* H, *Turacus hartlaubii* H, *Bycanistes cristatus* H, *Viridibucco simplex*, *Pholia femoralis* H—*P. sharpii*, *Onychognathus walleri*.

The foregoing, derived from the two mountains a couple of hundred miles apart, gives some idea of the structure of the mountain-forest bird-community in East Africa : with the proviso that not all the species will necessarily be found in any given part of either mountain, and that the altitude limits of some species may be found to differ appreciably in different parts of the same mountain. It will be noted moreover that, in addition to those included in the analysis above, Mount Kenya supports seven more species not represented, or with no equivalents, on Kilimanjaro.

MOUNT MERU

Far less has been written about Mount Meru than of the two greater mountains. There is still no good general description of the mountain in English and the account given in German by Meyer in 1909 (*Das Kolonialreich* I) has not been superseded. The published information about the plants is based almost entirely on three hundred collected by Uhlig many years ago. The small mammals are practically unknown although the mountain was visited by the Swedish Kilimanjaro-Meru expedition. Only the birds have been fairly well worked. There are several additions to those given by

Moreau (1936). Elliott has records of *Nectarinia johnstonii*, *Pinagochroa sordida* and *Serinus flavivertex*, the first at the top of the heaths at 11,500 feet and the other two on the scree that forms the final peak. Also for the sake of completeness it may be worth recording that I have specimens confirming the sound record of *Apalis melanocephala moschi* van Som., and that Elliott has collected *Smithornis capensis*, *Trochocercus bivittatus* and *Batis capensis mixta* on the Ngongongare ridge. Only the last is probably to be regarded as a montane form.

For zoo-geographical discussion the following points of topography need to be recalled. The main mass of Meru, rising to nearly 15,000 feet, is approximately conical. From the west it appears a perfect cone, a text-book volcano; from the east it is evident that the entire crater rim on that side has been blown out so that one is looking into a huge steep-sided amphitheatre shaped like a horse-shoe. The Ngongongare-Ngurdoto ridge, which is not higher than about 5,000 feet and is heavily forested, runs out eastward from the main mass for nearly ten miles. This Ngongongare forest is separated from the south-west edge of the main Kilimanjaro forest by a distance of less than fifteen miles, but most of this is very dry open country that presumably owes its dryness to its position in a rain-shadow between the two great mountains. On the other hand it is possible to cross from one forest to the other without going below about 4,500 feet and the vestiges of evergreen forest west of Sanya Juu show that the barrier to interchange of forest populations has in very recent times been less than twelve miles.

On the west Mount Meru is in full connection with the Mondul-Tarosero-Burko-Essiminingor volcanic ridge. This varies in height between about 6,000 and 8,500 feet and carries patches of evergreen forest that have every indication of being continuous in recent historical times. West of Essiminingor and Burko, the Rift Valley, with floor barely 3,000 feet above the sea, separates this strip of montane country from the Loolmalassin-Ngorongoro-Oldeani area that is ecologically so similar. The gap between the forest on the opposite sides of the Rift is here well under twenty miles, but appreciably wider than that between the Kilimanjaro and Meru forests. Moreover, the level of the intervening country is much below the 4,500 to 5,000 feet that I regard as probably limiting for montane species in this part of East Africa. On the other hand Elliott thinks that the Rift Valley floor towards Ngaruka is less arid than the open country between Sanya and Ngongongare. It appears, however, that on balance the barrier to montane birds between Kilimanjaro and Meru would have been much less formidable than that presented by the floor of the Rift at the western end of the Meru-Essiminingor montane.

As restated by Engler (1925), the vegetation belts of Meru are, on the south side :—

Forest to 2,200 metres (7,200 feet).

Bamboo 2,200 metres to 2,700 metres (8,800 feet).

Forest (*Hagenia*, etc.) above bamboo to 2,900 metres (9,500 feet).

Moorland above 2,900 metres with "*Lobelia deckeni*" and "*Senecio johnstonii*"

Recently the giant lobelia of the Meru moorlands has been identified as not *L. deckenii* but *L. burtii* E. A. Bruce, otherwise known from Hanang and Loolmalassin.* What species the giant groundsel may be is still uncertain. In calling it *S. johnstonii*, Engler ignored Milbraed's identification of it in 1922 as *S. kilimanjari* (*Fedde Repert. Spec.*, Nov., 18, 230). However the single specimen Milbraed had was so extremely imperfect—only a leaf-stalk—that the identification is open to doubt. Specimens of any giant groundsel found on Meru in flower would be exceedingly welcome for the Amani Herbarium, especially if accompanied by a note of the altitude and by a photograph of the plant as a whole.

From my personal knowledge and from information given me by Elliott, I should accept for the wet south-east and south sides the altitudes given by Engler. Sjöstedt (in Lönnberg 1910) makes a consistent error by ascribing to one forest species after another an upper limit of 3,500 metres (11,500 feet) and for one, *Cinnyris mediocris*, he actually gives "Regenwald 4,400 metres" (14,400 feet), which is preposterous.

On the drier west and north sides of Mount Meru the forest belt is far less thick: its lower edge above Oldonyo Sambu is in places as high as 6,300 feet and, as I have seen, the bamboo is reduced to remnants. D.O.A. 1:300,000 sheet B5 (1911) shows a complete break about two kilometres wide in the forest belt on the north-east running towards Engare-Nanyuki, and this is of course reproduced in the later maps. Geilinger (*unpublished*) speaks categorically of the forest belt surrounding the mountain on all sides (*allseitig umfassender Regenwald*) and states that the bamboo belt is only on the south and south-west, disappearing completely on the north and east (*Ost- und Nordseite sind frei von Bambus*). This does not, however agree with the fact that Elliott, attempting the ascent recently from Ngongongare, encountered an extremely lush bamboo belt.

Observations kindly obtained for me in 1944 by the Assistant Conservator of Forests at Moshi from J. S. Groome of the Forest Department, confirm that at Engare Nanyuki on the north side of the mountain there is "a definite break in the forest belt, as regards standing live trees". It is in the shape of a triangle, two kilometres wide at the base, barely one-tenth as wide at the top, and bounded on both sides by fairly deep ravines that converge towards their heads. An old local inhabitant stated that forty years ago the gap was only a few yards wide and that it had repeatedly been widened since by fires. The dead and charred cedar poles standing in the gap confirm the recent destruction.

*Bruce, E. A., "The Giant Lobelias of East Africa", *Kew Bull.*, 1934, 61-88, 274.

The area above the forest and bamboo on Meru is only five miles in diameter, giving a surface of less than fifteen square miles, part of which is bare scree. However, the most characteristic species of the Kilimanjaro alpine, *Pinarochroa sordida*, *Nectarinia johnstonii* and *Cisticola hunteri*, occur there. The sub-species are not yet known. The *Cisticola* does not apparently develop darker plumage at the higher altitudes as it does on Kilimanjaro, but this requires confirmation.

Considering the proximity of Meru to Kilimanjaro the biological differences between them are surprising.

In the birds of the forest belt we have the following vicarious forms:—

TABLE 6

Meru	Kilimanjaro
<i>Francolinus squamatus schuetti</i> Cab.	<i>F. s. maranensis</i>
<i>Alseonax adustus murinus</i> Fsch. and Rchw.	<i>A. a. chypulu</i>
<i>Turdus olivaceus oldeani</i> Sclater and Moreau	<i>T. o. deckeni</i>
<i>Geokichla gurneyi raineyi</i> Mearns.	<i>G. piaggiae kilimensis</i>

In three of these four cases the Meru specimens agree with those from the mountains west of the Rift. (The francolin has not yet been found there in any form.) The same affinity between these mountains and Meru is shown by the fact that the Giant Forest-hog (*Hylochoerus meinertzhageni schulzi* Zukowsky) and *Lobelia burtii* occur, and that bamboo is abundant, on both of them, but not on Kilimanjaro.*

Apart from the birds mentioned in Table 6, the following that are on Kilimanjaro have not been found on Meru: *Pholia femoralis*, *Nigrita canicapilla*, *Poliospiza burtoni* and the *abbotti* and *münzneri* mutants of *Chlorophoneus nigrifrons*. Of these the *Nigrita* and the *Poliospiza* have been collected, in the Kilimanjaro sub-species, west of the Rift and the *Poliospiza* may confidently be expected on Meru.

SUMMARY

The birds of Kilimanjaro and Mount Meru are rather well known; the mammals much more imperfectly, hardly at all for the Kilimanjaro moorland and for Meru as a whole. The available information is listed and compared with that for Mount Kenya. The zoo-geography is discussed in relation to significant topographical and vegetational features. Making due allowance for the more imperfect knowledge of Kilimanjaro it appears that Mount Kenya, which is part of a much larger ecological (montane) island, appears to have a somewhat richer fauna. Mount Meru shows surprising differences from Kilimanjaro and affinities with the mountains on the far side of the Rift.

*The Meru record of the hog needs to be confirmed by specimens. Although the original description of *H. m. schulzi* quotes Mount Meru, the basis appears to be only a sight-record (Hayman *in litt.*).

A BIBLIOGRAPHY OF KILIMANJARO, 1944

By C. Gillman

I cannot think of a worthier introduction to a Bibliography of Kilimanjaro than the first stanzas of Bayard Taylor's inspiring ode to the mountain, written in 1885—

HAIL to thee, monarch of African mountains!
Remote, inaccessible, silent and lone,
Who from the heart of the tropical fervours
Liftest to heaven thine alien snows.

* * * *

Zone above zone, to thy snow-crested summits
The climates of Earth are displayed, as an index,
Giving the scope of the Book of Creation . . .

MY FIRST attempt to compile a Bibliography of Kilimanjaro, comprising ninety-six books and papers arranged in chronological order and classified according to their interest to different branches of science, was published in *The Icecap*, No. 1, 1932. Unfortunately this "Journal of the Mountain Club of East Africa" was short-lived and its first and only number has long been out of print. The facts that a fair amount of literature on the mountain has appeared during the last decade, that a number of friends are clamouring for a new edition of the Bibliography and, above all, that we now possess in *Tanganyika Notes and Records* a periodical not only accessible to many more interested people than *The Icecap* had been, but, so we hope, more securely established in its circulation than the latter, have induced me to produce this second, greatly enlarged and improved, Bibliography.

The number of entries has risen to one hundred and seventy, partly through the new material published since 1932, but also to a large extent by including minor scientific references, reviews and notes scattered through the pages of geographical and other periodicals which formerly were either not available in Dar es Salaam or which I had thought unimportant to the readers of *The Icecap*. Following the advice of the Amani librarian, to whom I am indebted for much valuable help, the chronological order is replaced by an alphabetical arrangement of authors' names. The scientific classification now appears in the form of capital letters (A to J) in the first column of the Bibliography whereby, it is hoped, an easy and reliable guide has been provided for the serious student. The titles of *books* are given in inverted commas and those of *shorter papers* are followed by references to the periodicals in which they have appeared, the often long names of these periodicals being given as a rule in abbreviated form except where the periodical appears only once or twice in the Bibliography (*vide* the alphabetical reference lists of the classification symbols and of these abbreviations).

The many alternative spellings of Kilimanjaro and of the tribal name of its people, Chagga, due largely to the different nationalities of the authors, but also to revisions and alterations within the same language, have been ignored in the titles by writing throughout merely K. for the mountain and Ch. for

As a by-product, so to speak, of the tedious compiling of this Bibliography, the data for a Cartography of Kilimanjaro came to hand readily and its publication may interest and help students. In it I have followed a strictly chronological order, the year inserted immediately after the author's name being the year of publication and not of compilation of the map. With the exception of items (1), (3), (5) and (15) the information on which is derived from references in literature only, and of item (31) which is not yet published, all the maps listed are in my collection. There also exists a fairly large number of sun-prints of unpublished departmental maps (Forestry, Administration Railways, etc.), both German and British. As these are not, as a rule, easily accessible and are mostly concerned with locally restricted problems, they are not included in a Cartography intended for the general student rather than for the specialist. A partition into three periods suggests itself: A.—Earliest small-scale maps (pre-1885) of parts of Africa on which Kilimanjaro is marked; B.—Maps produced during the period of intensive exploration (1885-1912) and dealing more specifically with Kilimanjaro proper; C.—Post-war period (1920-1939) which shows a marked slackening of geographic effort but a significant ascendancy of touristic interest.

LIST OF CLASSIFICATION SYMBOLS†

A.	...	...	Botany.
B.	...	...	Climate and Health.
C.	...	...	Ethnography.
D.	...	...	Exploration and General Geography.
E.	...	...	Geology, Petrology and Volcanology.
F.	...	...	Glaciology.
G.	...	...	Narrative.
H.	...	...	Topography and Surveys.
I.	...	...	Tourism.
J.	...	...	Zoology.

*NOTE.—While this bibliography was already in the Press, the following first scientific articles came to hand:—

KENT, P. E. Kilimanjaro : An Active Volcano. *Nature*, Vol. 153, 1944, No. 3885, pp. 454-55.
SPINK, P. C. Weather and Volcanic Activity on Kilimanjaro, *G.J.*, 103, 1944, pp. 226-29.
" " Glaciers in Kilimanjaro Crater. *Q.J.R. Met. Soc.*, October 1945.

†Where an item has been given two or more of these symbols the first refers to the book or paper as a whole, the others to more specialized chapters it may contain, e.g. G.A. signifies a narrative account by an author with special interest in botany.

LIST OF ABBREVIATIONS USED FOR THE TITLES OF PERIODICALS

<i>A.J.</i> ...	Alpine Journal, London.
<i>A.P.A.W.</i> ...	Abhandlungen der Preussischen Akademie der Wissenschaften, Berlin.
<i>B.A.A.S.</i> ...	Reports of the British Association for the Advancement of Science.
<i>D.K.B.</i> ...	Deutsches Kolonial Blatt, Berlin.
<i>D.K.K.A.W.</i> ...	Denkschrift der kaiserlich koeniglichen Akademie der Wissenschaften, Wien.
<i>D.K.Z.</i> ...	Deutsche Kolonial Zeitung, Berlin.
<i>G.J.</i> ...	The Geographical Journal, London.
<i>G.Z.</i> ...	Geographische Zeitschrift, Leipzig and Berlin.
<i>J.L.S.</i> ...	Journal of the Linnean Society, London.
<i>M.C.S.A.</i> ...	Annual of the Mountain Club of South Africa, Cape Town.
<i>M.D.S.</i> ...	Mitteilungen aus den Deutschen Schutzgebieten, Berlin.
<i>M.G.E.</i> ...	Monatsberichte der Gessellschaft fuer Erdkunde, Berlin.
<i>M.G.G.W.</i> ...	Mitteilungen der kaiserliche koeniglichen Geographischen Gesellschaft, Wien.
<i>M.H.G.G.</i> ...	Mitteilungen der Geographischen Gesellschaft in Hamburg.
<i>N.S.</i> ...	Natural Science.
<i>N.W.</i> ...	Naturwissenschaftliche Wochenschrift.
<i>P.M.</i> ...	Dr. A Petermanns Mitteilungen aus Justus Perthes' Geographischer Anstalt, Gotha.
<i>P.R.G.S.</i> ...	Proceedings of the Royal Geographical Society, London.
<i>P.Z.S.</i> ...	Proceedings of the Zoological Society, London.
<i>T.N.R.</i> ...	Tanganyika Notes and Records, Dar es Salaam.
<i>V.E.L.</i> ...	Verein fuer Erdkunde, Leipzig.
<i>V.G.E.</i> ...	Verhandlungen der Gesellschaft fuer Erdkunde, Berlin.
<i>Z.A.E.</i> ...	Zeitschrift fuer Allgemeine Erdkunde, Berlin.
<i>Z.D.G.G.</i> ...	Zeitschrift der Deutschen Geologischen Gesellschaft, Berlin.
<i>Z.D.O.A.</i> ...	Zeitschrift des Deutschen und Oesterreichischen Alpen Vereins, Innsbruck.
<i>Z.G.</i> ...	Zeitschrift fuer Gletscherkunde, Berlin.
<i>Z.G.E.</i> ...	Zeitschrift der Gesellschaft fuer Erdkunde, Berlin.
<i>Z.V.</i> ...	Zeitschrift fuer Vulkanologie, Berlin.

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Introduction to Witchcraft in Africa

By H. C. Baxter

IF THE MAN who reads about witchcraft must approach the subject with circumspection, the writer or lecturer on the subject must be even more careful since he cannot anticipate the various readers' methods of approach. Some, for instance, may take up this paper prepared to disagree with all its contents; others may be ready to look for any line of argument within its pages that may correspond with a previously accepted theory of their own, and yet others may discover that, until they read this introduction, they had never attempted before to approach witchcraft in the proper frame of mind.

In discussing witchcraft, you are discussing the influence of certain men over their fellows and the problem can therefore never be adequately approached until or unless you have examined these fellow-men who are the objects of that influence. Indeed the study of your fellow-man is an essential to success in every walk of life, in business, in the public service and especially in medicine: and, after all, witchcraft is medicine. The reader who at this moment believes that he ever trained a dog or drove a chicken into its coop by impressing his own will on the creature is not in a proper state to continue with this article until he sits back, thinks again and confesses that he had to think dog-fashion or hen-fashion before he attained his object. And similarly he must confess that, after years of study of the subject, whether half-hearted or whole-hearted, he appreciates practically nothing of the mental processes of his best friend, his equal or near-equal in general "make-up" and could never diagnose correctly the exact influences or internal argument that led up to the uttering by that person of even the simplest remark.

The total inadequacy of words to express thought, the inherent inability of man to express himself in intelligible language—the fault lying partly with him and partly with the vehicle of thought that he uses—and the consequent lack of sympathy even between equals in constant converse and association with each other must be admitted and argues how difficult it will be even to begin to understand men of a different race and upbringing.

Let us propose for discussion the suggestion that everything inanimate and animate is at the disposal of one mind, which is of God, and that the object, as yet unattained, of every sensible being is to attain to harmony with that mind. Each one of us, being as yet far removed from that harmony, must be deemed out of mind and the measure of "insanity" in each case depends upon the amount of effort made to attain to that harmony. And let us put down the obvious platitude that the easiest, indeed the essential, way of attaining our objective is by a study of man who was made in God's image. This is a proposal that has been presented for examination a thousand times in a

thousand varieties of dress; it is the basis of most known religions though every preacher uses his own method of approach to the subject and recommends his own methods of attainment to the desired end; man's relations with his neighbour qualify in every religious code the measure of his approach to godliness, just as much as, in a wordly sense, they contribute to his success in the material things of this existence.

Moreover, in this relationship, control of one's own mental processes is as essential as is some measure of control over the mind of the object person. A doctor will attain to greater success in any difficult case if he breeds or begets in himself an element even of exaggerated self confidence and then proceeds to project into the mind of his patient a similar faith, a faith in himself as patient (the will to improve) and a confidence in his doctor and in the medicines he produces. A business man will bring off a deal all the more satisfactorily if he uses the same methods; indeed the measure of his success depends upon his control of self and of his fellow-man. An administrative officer, engaged in propaganda to any purpose, will succeed or fail according to the same principles.

Before we proceed with this argument further we must pay a call upon the atheist to show him that even his rule of life fits in with the same argument. With him, of course, the one mind is not of God but is an instrument accessible to all, upon which each mortal plays his own peculiar tune, and strives on occasions to make harmony and on occasions discord with his neighbour. And let us pay a call upon the philosopher, who prefers not to be called plain atheist, and let us take for instance the *nous* of the Greek school, a very average philosophical theory, the Force that guided creation. The ordinary dictionary translates the Greek *nous*, somewhat inadequately, into the English "mind"; if *nous*, according to the philosopher, guides creation, it must still be in operation unless it can be proved that the Act of Creation is complete; and even if that proof were forthcoming, it would be against all philosophical argument to suggest that the Force conveniently disappears upon completion of its task; rather, will it remain in evidence to guide further the created Thing, and more especially the created Being. I know of no philosopher who has suggested that *nous* has bequeathed or would bequeath to another Force the future of matter once created. Such a theory would run contrary to that very nature which philosophy attempts to explain.

Let us return to the theist who believes that God created man, body and soul (or mind), in his own image, and ask why each man is different from his neighbour in body and in mind? The answer is that though God made man in his own image, he did not make all men alike in form or shape. Even one man of His making can be reflected in innumerable forms in a series of mirrors. And so individuality was given to man—for a purpose. The theist, proceeding with his theory that the One Mind is of God, and pointing at the philosopher, will argue that the man furthest removed from that sympathy with the One Mind which is Perfection is the fatalist, a philosopher of sorts

who believes that his past, present and future was fore-ordained and that he could do nothing to avoid what was or is coming to him. This man is a danger to himself and his neighbours and is little removed from the animal who often has to be assisted by a more knowledgeable Being to avoid danger. Yes; the theist, the atheist and philosophers do admit, in some way or other, that there is a Mind, and, being themselves imperfect, go further and suggest that it is incomprehensible; each attempts the approach to understanding in his own way, the yogi, the spiritualist, the alienist, the hypnotist and others (I mention especially the two latter as seeking an answer to the riddle by a study of other individuals made in the same image as themselves).

The word sympathy, recently mentioned, is now re-echoed as we approach closer to the subject of witchcraft, for the measure of sympathy between doctor and patient is a deciding factor in any practice of medicine.

Sympathy demands an attitude on the part of both. With the attitude of the doctor as the determining force creating in the patient an attitude in co-relation. If the doctor, knowing himself mere mortal, can create in himself a belief that he is of God, an agent, and if he can persuade the patient to re-echo that belief—of such an attitude are miracles made; "miracle" being, of course, a term invented by mortals.

A correct approach to witchcraft is a confession of abysmal ignorance tempered with a will to learn; such as is usefully illustrated in this provocative quotation from the *Nine Books* of Noor Ali :

"My quarrel is not with knowledge. That which ye believe ye know is knowledge until ye learn it is not. It is better to know falsehood and believe it than to do lip-service to the truth and disbelieve it. Wherein I so fundamentally depart from custom is that I repudiate your hopeless, 'Thus far and no farther'. There are laws, experience and logic that we know not yet—nay, not the wisest of us. Thus far and no further until death is the command of hypocrites who crave obedience from fools."

Such a directive is a warning to any man who, upon little evidence and less experience, has condemned witchcraft as of little importance and so dismisses it after attributing its many successes, for no explicit reason, to some such futility as "lack of faith" or a "morbid passion for excitement" or "a blind belief in the supernatural". To laugh at the faith-healer of to-day, to sneer at the ceremony at Lourdes, or even to pass over, as of little consequence, the fact that the man in the street refuses to walk under a ladder, or that his girl-friend, especially if she be Irish, will bow to the new moon and turn her money over, is the attitude of a person who has no conception of mind and its implications; it is defeatism, a confession that even an attempt at sympathy with God or man is lacking. And so we come to witchcraft amongst Africans. It is not very original to repeat the obvious and to say that the African, by reason of his environment, is one of the easiest victims the witch-doctor ever met.

If we, after our very mild period of savagery two thousand years ago, are only now seeing the last of the trees from which witches were hanged in Britain, the African with his history should even to-day be easy money for the charlatan. Wild weather, savage beasts, horrible diseases, and a scenery that is often terrifying must create an environment wherein the object of all these experiences is ready to accept any theory to explain even the most elementary mysteries. There is no more terrifying ordeal than to have to face the unknown. One can even be happy in death if one knows the rhyme and reason for it. The African man, of course, early conceived the idea of one Force which is God and, for his own comfort, assumed a belief in spirits that could mediate between him and the unapproachable. With his environment, he could not avoid his first impression of God, the creator of all these terrible things, as an awful person, too occupied to be approached direct by the millions of men on earth, his creatures.

Unfortunately, having created spirits, they had to be both good and bad—a natural development just as it was inevitable that God could be angry at one time and merciful or gracious at others. The spirits, again of course, were mainly the spirits of the departed though a few others were invented who seem to have been regarded as heads of departments—the spirit of agriculture being a prime favourite—their relationship with any normal being or with the spirit of any normal deceased being debarred from discussion. And on this basis is native religion founded—the attempt of the pagan African to attain to harmony with the Godhead or at least to maintain contact with Him. The Pare skull worshippers, the many tribes that fashioned clay images into which, upon invocation, certain spirits would venture, the tribes who believed their chiefs to have something of the Godhead in them, all these were attempting to send messages to God through a medium. And it was upon these media that the witch-doctors claimed to have certain influences. There were good spirits and bad spirits, there were doctors who practised white magic (for common good or for the good of individuals) and other rascals who practised black magic; there were, there still are.

All of them are specially trained and most of them came from families that have handed down the art from father to son for several generations. Their training is, of course, intended to create in the pupil that attitude which creates his sympathy with the patient *en masse* and with the patient as fellow-man and also to create in him the power to project his mind, his will upon fellow-man. That sympathy is in part ready made for him in that the society in which he will operate already believes, as he himself believes, in the existence of spirits, good and bad, that can come under man's control. The only attitude the pupil has to create is belief in himself, by himself and by society, as a possessor of that power to control. By the time he has graduated, generally under his father's tuition, the doctor has become an informed herbalist, trained in the use of herbs, roots and all vegetable matter externally and internally, he is an expert in elementary medicine and can treat shock,

snake-bite, faintings, swellings, fevers, fractures, bleeding, irregularity of the bowels and all such everyday maladies; he is trained often in midwifery (as far as the African male is allowed by usage to approach that subject) and, above all, he is versed in the art of propaganda and self-advertisement. He has acquired a "bag of tricks", not very exciting to look at nor very elaborate as a visit to the Memorial Museum any day can prove to you, but essential because society expects something of the sort from him and expects to be asked to have faith in the uses or usefulness of such articles. And lastly he is a trained "evasionist", he must always be ready to excuse failure since failure is perhaps more common than success in medicine. The stock example of evasion might here be quoted, taken, as many readers will remember, from a rebellion against the Germans in 1905/6 which was given its name "Maji-maji" to be a fitting memorial for all time to a superb piece of evasion. The natives, going into battle against the Germans for the first time in this rebellion, asked their "chaplain-general" for a medicine that would save them from German bullets. The doctor knew from the start that he would have to explain away something in the very near future and he gave his verdict accordingly. He took ordinary water from a nearby river and performed the usual magical ceremony over it; he then gave it to them all to drink and he told them that if, after drinking this, they went into battle shouting "Maji-maji", the bullets would pass them by. After the fight; from which the Germans retired, the doctor had to face accusing wounded amongst the dead on the battlefield. His answer is too obvious, "Poor fools! you and they (pointing to the dead) must have forgotten to say 'Maji-maji'." The dead could not answer back and of the wounded, confident in their doctor and eager to retain that confidence, not one came forward to gainsay his pronouncement.

Finally, to illustrate all points made in the introduction to the study of a very interesting subject, a story of Ngoja bin Kimeta must be told. Ngoja is undoubtedly the most successful exponent of the art of white magic that the twentieth century has yet produced; the writer knew him well for some years. An artist in propaganda, he knew as well as does the British business man that advertisement must never stop, the public must be constantly reminded of him. A sample of his propaganda, in this case aimed to increase his already tremendous power and popularity, is found in the story of his "cure" of the headman's son at Kifmangao on this coast between Dar es Salaam and the Rufiji. The writer was collecting head tax in that area in late 1924 and found that all the villages he slept in were "squeezed" almost dry; few taxes were forthcoming. Judicious investigation produced the information that they had recently paid fees to Ngoja who was also on tour in the neighbourhood. Ngoja was pursued and found at Kifmangao. A few days before the headman's son, out bird-nesting, had fallen down a tree and broken his leg. The headman sent word to Ngoja who was found talking to a circle of elders in a nearby village and, on hearing the news, he turned to the elders, shaking his head and pointing at this as yet another example of the dangers of living

in an unclean village where witches, possessed, were allowed to go their way untreated. And after the exchange of several messages, during which, of course, a fee was named and accepted, Ngoja made his way to Kifmangao. It will be perceived that Ngoja had set his stage at Kifmangao before he even arrived; he had already created the required attitude, which can be briefly described as follows: The people of Kifmangao believed in the existence of evil spirits, the souls of men who had been wrongly used during life in the village, men done to death or condemned on false evidence to pay a penalty required by native custom, indeed the souls of any men who might be expected to bear a grudge; they further believed in a general way that such spirits can inhabit for any length of time a human body, often enough without the owner thereof realizing his state, and they now believed that such spirits had taken up like habitation amongst themselves and that Ngoja could and would deal with the matter—at a price. Needless to say, the unwilling landlord to the evil spirit or spirits had an evil eye and cast it upon the headman's son. And now we come to a story similar to the tale of the Gadarene swine in our *New Testament* (St. Luke, Cap. 8, V. 26, *et seq.*). Ngoja first, however, had to find the evil spirits and then to exorcise them. The whole village was called together—man, woman and child—the drums beat, the doctor rattled his bones; the assembly was worked up into a final frenzy, and a servant of Ngoja went round placing a pinch of white powder on every tongue, when suddenly here and there six old women fell into fits, one after the other, calling upon all and sundry to witness that they were “possessed”. Ngoja again had conquered and the tasks of exorcism (another fee please) and even of setting the boy's leg were but minor details, performed as a matter of course as only secondary to the main performance.

In this example, there are seen instances of practically every side of the doctor's practice in white magic, the use of his knowledge of man's mind in the mass to produce the correct atmosphere, the use of some art akin to so-called hypnotism to carry the crowd with him to his climax and to overpower the mental resistance in his six “victims”, and finally the employment of exorcism, to deal with the women, and of elementary medicine to deal with the boy. Everybody now was happy and Ngoja was especially content: he collected further revenue next day in the sale of charms to prevent the return of these or other evil spirits to that village and in his success he had presented himself with a whole village of disciples eager to spread round propaganda in his favour. And Ngoja, supported unanimously by the village, had an answer ready for the administrative officer. He was a public benefactor; he had cleansed that village of disease both in body and mind, he had arrived to find men in the depths of despair and he left them now preparing for joyful celebration in his honour and in gratitude for the “cure”.

A specimen of the white powder used at the climax was obtained and forwarded to the Government Analyst; it was found harmless. There is the

suggestion, upon no evidence, that in all other cases the harmless powder was swallowed but that in the case of the six a drug was administered. The point is that, however he did the trick, Ngoja satisfied everybody and himself, and that the employment of suggestion is a possibility.

A few weeks later men of a nearby coastal village, intending to make their regular move inland with a caravan of salt which they exchanged in distant villages for various foods unobtainable at the coast, came to Ngoja with a request that might have startled many less efficient. These men were fearful for their wives' virtue during their absence; there were some handsome lads in the village who would be left behind. Ngoja called at the village, summoned an assembly and required of every married woman that she should swallow a medicine prescribed. He then told these women that any one of them who was unfaithful to her husband during his absence would become inevitably the landlord of a host of evil spirits, a danger to all and would die a lingering death of that medicine. The men went away with their salt rejoicing; the women remained scared to death, for not only must they be careful of their own virtue but they must watch their neighbours lest a curse, such as that of Kifungao, be brought upon their village. The power of suggestion, the power, in Ngoja's case, of self-advertisement, made all things possible; the trick played here may not be original but it has its merits. Ngoja exploited to the full his knowledge of the influence of mind over matter.

There was, as one further instance, the case of the man of Vuga in the Usambaras, though, as far as is known, Ngoja was not here the doctor. He had suffered from chronic bronchial trouble, akin to asthma, for years. His native doctor scratched the patient's breast till blood flowed, produced a common grasshopper alive from his "bag of tricks" and applied it to the scratch, forcing its head to the blood as if drinking. The patient has not had a recurrence of his trouble since 1926.

If this lesser light of the medical world could so succeed, the variety of Ngoja's performance (his name is common talk almost all over the Territory) can only be imagined. There should, indeed, be no hesitation in saying that Ngoja in his prime, having the average African patient at his disposal, had literally the powers of life and death within his hands. He never, to the best of our knowledge and belief, practised black magic; and when we accept, as we must, the proven statement that those of his contemporaries who practised the black art condemned many men to death, mainly by suggestion, how much more readily must we accept Ngoja as the saver of many lives, often by suggestion only.

I believe that the European trained doctor would admit that in many cases an African patient was safer in Ngoja's hands than in his own; the cases in point being where the use of mind over matter was an essential element of the cure. The alien doctor cannot claim to have any mental influence over the majority of his African patients. indeed, the reverse often happens, for the

African's innate conservatism and suspicion of anything new is often a state of mind against which the alien must wage as yet a hopeless fight. The fight will, of course, be eventually won; the uses of the hypodermic syringe and the advantages of vaccination or inoculation have already been eagerly accepted, but to-day is still Ngoja's day and he can often effect a permanent cure where the alien European has failed.

We call it witchcraft, we speak of magic, but the sum total of it all is the exercise of mind over matter by sympathetic approach.

Game in Relation to Tsetse

By G. G. Rushby

OUT of the great wealth of wild animal life that was and still is to a lesser extent in Africa, the African has not domesticated any single species or sub-species with the doubtful exception of the dog, used entirely for hunting purposes. Cattle, goats, donkeys and sheep were originally imported from Asia and the history of the camel is so lost in the dim haze of past history that it may be left out of consideration. This gives food for reflection and it is humiliating to know that little has been accomplished by modern man in Africa with the exception of the elephant farms at Buta and Api in the Belgian Congo. It strikes one forcibly when one travels in some of the game reserves where game has not the abject fear of man that it has in the greater part of the Territory, what opportunities have been and are being lost.

Gordon Cummings, the early hunter and explorer, describes how, during 1860, in the Orange Free State, a game drive was organized in honour of the Duke of Edinburgh, afterwards Duke of Saxe Coburg. It was estimated that the number of animals surrounded and driven was twenty-five thousand and about six thousand of them killed. The steady slaughter of African game animals has continued since then and even to-day there are many, some who should know better, who advocate the destruction of all game outside game reserves. Already we have lost the Quagga and the Blaauwbok, and other species are on the verge of extinction. These lost species, the result of millions of years' evolution from the tertiary period, cannot, in spite of modern man's smug satisfaction about his achievements, be replaced. Something to marvel at, something beautiful, and least of all something of material value, has been lost for ever and is not replaced by some stinking noisy mechanical contraption. Men appear to have forgotten that once they have destroyed a species of nature, a creation of God, it is not in their power, nor ever will be in spite of the triumphant progress of industrial science with its insatiable maw, to renew or replace it; and what fundamental right has man to destroy deliberately such a creation which must have a *raison d'être* otherwise it would not have been there?

There are thousands of men who as youths translated Cicero and sweated over Aeneid but never translated a bird's song nor its message. They followed the campaigns of great soldiers and the erratic courses of politicians, but never the course of a rivulet or a star. Some even sat on a three-legged stool and debated philosophy on an Ash Wednesday, but never sat quietly for an hour to observe and get into communication with nature.

Of the many lessons the game of Africa has to teach us, we have failed with one exception, and this often only by accident, to take advantage. This single exception is the great skill of the elephant as a road location engineer. Many of Africa's main highways over difficult country were originally aligned by elephants who had and still have complicated road systems of their own that are used by them in their seasonal migrations. There still exist main elephant routes in this Territory along which one may travel by motor cycle for considerable distances and at reasonable speed. The matter of over-grazing with its resultant evils of soil erosion is another lesson not yet learnt from game. Game has evolved a scientific pasture management better than anything that man has evolved in Africa.* Within present-day memory, areas that carried a large game population have been deliberately almost denuded of game and taken over by domestic stock and man. The stock on these areas at their best was never more than fifty per cent of the head of game that were originally there and later on not more than twenty-five per cent, with over-grazing, bad erosion and in some cases eventual evacuation from a ruined land. An outstanding case in point is the United States of America where on the central plains roamed countless herds of bison. These bison were slaughtered in millions for their hides, to supply meat to labour building the railways during the latter half of the last century, and to make room for cattle ranchers and farmers. The result was the mid-west dust bowl which had the makings of a Sahara causing untold distress to the inhabitants and costing millions of dollars to rectify the ill-conceived work of man.

In Tanganyika the present catch phrase is, the game must go because of tsetse and rinderpest (cattle disease). This is stated so often by people who should know better that everyone is beginning to believe this is so. Southern Rhodesia had spent a total of £85,000 up to 1941 with an annual expenditure of £1,500 on destroying and driving all game back by shooting on a broad front, four hundred to five hundred miles, between two game fences to keep the game back from settlement for the purpose of eradicating tsetse. There is disagreement on the efficacy of these measures; people responsible for the scheme and tsetse control claim success, European farmers in the area disagree entirely and some go so far as to say that although the game has entirely disappeared and tsetses in some places are reduced in numbers, in other parts the density of fly has increased and there are entirely new outbreaks of *nagana* that could not possibly be due to game. The density of tsetse to some extent depends on the density of game animals, that is to say, if you destroy or move all game animals you may reduce the tsetse fly density, but it is impossible to eradicate fly in this manner so long as fly bush in the area remains. On the other hand, if the fly bush is destroyed the tsetse leaves regardless of the amount of game left in the area. Referring to tsetse fly, Napier Bax states

*This idea, so helpful to our understanding, is touched upon in *T.N.R.*, No. 1, 1936, page 7.—C.G.

in his pamphlet "Tsetse Reclamation and Field Experiment", chapter F, section 1, paragraph 2, "reduction is not enough; extermination is necessary".

I was hunting elephants for a number of years in the Belgian Congo and French Equatorial Africa and much of the time was spent in the bad sleeping sickness areas. The outbreaks of sleeping sickness in those countries were much worse than any experienced in Tanganyika and the absence of game in what had been excellent game country was most marked, due to hard systematic hunting done by the natives. One could travel on foot through the bush following elephant for days without seeing a buck of any description. There may be no connection but I have observed that in the sleeping sickness areas where some game was left, as in Tanganyika, the incidence of sleeping sickness was light, whereas in the parts of the Congo and French Equatorial Africa where game had disappeared the incidence was extremely heavy; in some cases to such an extent as almost to destroy the whole native population. For these reasons recruiting in those areas for building the Brazzaville to Point Noir (French West Africa) railway had to be stopped and Chinese labour imported. Incidentally, on this railway construction the incidence and death rate from sleeping sickness was extremely high although there was no game of any description in the area.

In the Guinea Gulf, West Africa, there are two Portuguese islands, St. Thomas and Princes' Islands. There is no game at all on these islands and never has been in the recent history of man, yet tsetse flies are there and there are periodic outbreaks of sleeping sickness. On the islands in Lake Tanganyika there are tsetse and in 1926 the Belgians stated that these were infected with trypanosomes. There is no game or people on these islands. There is no game within forty miles of Dar es Salaam yet tsetse make it impossible to keep more cattle without further clearing of fly bush; the same applies to Morogoro and a number of other places.

It has been shown that tsetse can live entirely on the latex and juices of plants and it is known that trypanosomes and allied organisms occur in plants. Some biologists are of the opinion that trypanosomes found in plant latex are non-pathogenic but I do not think that much, if any, research has been carried out on these lines in relation to the tsetse. According to Dr. Warren of the Natal Museum, South Africa, a Mr. Davidson bred tsetses, feeding them solely on the latex of plants and subsequently fed them on healthy cattle and infected them with *nagana*. It should be noted that tsetse are free of trypanosomes when born. From this one may conclude that the tsetse fly is the primary host, not the mammal, and is capable of transforming the normally non-pathogenic trypanosomes in plant latex into trypanosomes pathogenic to man and mammal. That this is feasible is shown by certain non-pathogenic trypanosomes occurring in the fruit fly, an entirely vegetable feeder with no alternate vertebrate host. It would, therefore, appear that the tsetse is the primary host and man and mammals secondary hosts or carriers and the basic problem is **vegetal**.

One reads and hears much about the encroachment and spread of tsetse and game being held as the culprit. This statement that the tsetse is spreading is only a half truth and is apt to be misleading. The full truth is that the fly bush is encroaching into clean country and with it comes the fly. This encroachment is drawing in on all sides, patches of fly bush spring up miles away from any fly belt and they eventually become infested with fly, often carried there by cars and lorries. The advance of the fly bush is readily seen in certain areas encroaching into the open steppes. The bush grows outwards in the form of arms reaching out into the open plains forming pincer movements similar to those arrows on modern war maps showing the pincer movements of advancing armies. This bush is useless sort of stuff and is steadily absorbing the grazing lands. It has been said that in many ways this is a good thing as it prevents the over-stocking of the Territory with domestic animals, with the resultant evils of erosion which is general throughout. This really is a negative view to take for surely it is not beyond the means of the departments concerned to prevent these evils and introduce rational husbandry.

I have never heard it satisfactorily explained why the fly bush is steadily encroaching in all directions and absorbing the open plains. From observation, my personal opinion is that it is due to steady systematic and continuous destruction of game; the whole balanced ecological inter-relation has been upset, for game kept back the fly bush, and due to the present large-scale destruction of game animals the retreat before fly bush and its tsetse is becoming so rapid as to be extremely alarming in spite of efforts made to arrest it by various bush clearing measures at great financial cost, and which in any event are very localized in their effect, often only semi-permanent and at their best only a palliative. The rate of advance of fly bush and tsetse with it has been, and is, proportional to the rate of destruction of game.

Unproved science with its classical approaches and verbose jargon can be very dangerous; so can the upsetting of the balance of nature, particularly in Africa, for as sure as the tides nature will strike back as she is doing now.

Insignia and Ceremonies of the Heru Chiefdom of Buha, in the Kasulu District

By J. J. Tawney

MR. TRIPE'S interesting article on "The Tribal Insignia of Heru" in *Tanganyika Notes and Records*, No. 16, December 1943, prompts me to record a certain amount of additional information which I have obtained in the past three and a half years. The fact that there are one or two corrections to be made to Mr. Tripe's remarks demonstrates one of the characteristics of the people of Buha, that is their reluctance to divulge any matters of tribal history or custom; if after long acquaintanceship information is at last supplied, it is astonishing to find how it varies from teller to teller, how one will reverse the accounts, nomenclature and details of another. Before anything like a clear picture can be gained, it is necessary to put the same questions over and over again to a great number of people until something like agreement is reached on some points. The truth is that both the indigenous Waha and the Watussi overlords are extremely doubtful as to their past history and most of it is irrevocably lost. I have on many occasions had friendly conversations with all four Watussi chiefs of the Kasulu area of Buha together; all are sprung from a common ancestor who first came to Buha not, as history goes, very long ago, but not one could say with confidence where their stock came from—one thought their origin was in Egypt, another that they were indigenous to Abyssinia and so on, and in this case I am satisfied that there was no desire to conceal facts: the chiefs just did not know. Similarly, they are exceedingly vague about the origin of their tribal insignia, though there is little doubt that the Heru Spear Mkalinga is the original one brought in by the first Tussi Chief. What are stated to be the original drums are in the possession of another chief, Luhinda of Ushingu, and are housed with many other old relics, such as bows and arrows, iron implements of which the original use is exceedingly obscure, and sundry spears. It may be noted that Luhinda also has a copper spear of antiquity which is called Mkalinga, but although an attractive object it does not compare with the magnificent Mkalinga of Heru, and it is not claimed that it ranks in importance with it. Unlike the Chiefdom of Heru, at Ushingu I found little difficulty in visiting the tribal insignia and was allowed into the keeper's hut soon after I first arrived in this district by invitation of the chief. The emblems here are poorly kept and are covered by the soot of years; they are not taboo to handle and I was told I might take up any I wished to examine closely; only if I had the intent to steal or damage would the insignia have become too heavy for me to handle, and if, frustrated thus, I had decided in a fit of pique to burn down the hut and its contents, the drums would have sounded

of themselves and then emerged unscathed from the hut. I record these facts in passing only, as in the main I am dealing with the Heru Chiefdom only and shall now start with some additional information about the spears of Heru, then pass to the Mulinga and finally add some notes on Heru ceremonies.

I.—THE SPEARS OF HERU

Mr. Tripe is quite right in pointing out the difficulties of seeing the spears, particularly Mkalinga. After three and a half years of continuous service in Buha I have recently been invited, not altogether without solicitation, to visit the spears and, in fact, have done so within the past few days. Mr. Tripe's pictures represent a triumph as visits of this nature are by no means popular and I have been told that whereas the guardian had no particular objection to my seeing the spears as I had been for long in the district, no casual European visitor, however exalted, would be welcomed unless he had qualified in the eyes of the keeper. On my visit the keeper was friendly and expressed his appreciation when I thanked him for allowing me to see the spears, but when I asked him frankly what he thought about visits, he replied, as nearly as it can be translated, that normally he would give any *Mzungu* or other unauthorized person who tried to see Mkalinga a pretty dirty look. This, be it noted, *after* I had given him a present!

As to the spears themselves, one correction of a statement by Mr. Tripe must be made. He says that Kabagabaga is the personal spear of Fomura the guardian (Gomura in Mr. Tripe's article and the same man who holds sway to-day). This is quite wrong in the light of what both Fomura and Chief Gwassa of Heru told me; the story of Kabagabaga is that it is the spear used by Chief Ntare the Second when he called upon his minor chiefs to assist him in resisting the invading Wangoni. Kabagabaga is sent out by the chief to represent him at one of the *Tambikos* (*Kaliuzi* it is called) celebrated at the time of the harvest dances, the *Ndolegwa ya Mpeche* referred to by Mr. Tripe. It is said that every Chief of Heru must take this spear with him when he travels, and the present Mwami (Chief) Gwassa stated that if he did a formal tour of inspection around his kingdom, he might well require the spear to be carried in his retinue. On occasions when Gwassa has made foot safaris with me, it has, however, not been carried. I have got the impression that Kabagabaga is regarded by the people as an emblem of the chief's protection of his subjects against their enemies.

Kabagabaga does not live with Mkalinga—it is expressly stated that the two spears live apart and Kabagabaga is kept in the house of the chief's mother, who looks after the other insignia of the chief. Kabagabaga was not produced and exposed with the other spears; I was not invited to see it and certainly was not going to try and force a view if not voluntarily asked. Mr. Tripe also says that in his picture the spear held by the guardian is Kabagabaga. During my recent visit the spears (which on my arrival were on the ground, Mkalinga being cleaned with butter) were set up identically

as they are in Mr. Tripe's visit even to the extent of the pose of Fomura. I referred to the spear held by Fomura as Kabagabaga and at once realized I had committed an error; it was explained to me that Kabagabaga would not be set up with Mkalinga and that the spear held by Fomura was the ancestral weapon of the guardian; this spear is called Ntakayoberana. The spear held by the guardian in Mr. Tripe's picture is, so far as can be seen, identical with Ntakayoberana, and indeed, I am told that Ntakayoberana bears no resemblance to Kabagabaga. Further, the chief informs me that on Mr. Tripe's visit Kabagabaga was not on view.

When visiting Mkalinga one uncovers if wearing a hat. On my visit the chief, who was wearing a sun-helmet, removed it at once as soon as he came into the presence; the fact that I did the same and remained uncovered all the time I was there did not, I think, escape the notice of the guardian or of the chief's mother who was also present. If reference is made again to Mr. Tripe's picture it will be seen that the guardian is wearing a band round his head. Both he and the chief's mother wear similar bands, which are the special privilege and mark of the keepers of the insignia. I am told that these bands are called Rugori, that they are made of a special type of bark and sewn, and that they are worn all the time.

Mkalinga is brought out at other times than those of the great annual festivals and ceremonies, death or installation of a chief. Every two or three months, at a time decided by the guardian Fomura in conjunction with the chief's mother, Mkalinga is brought out from his hut and set up in the open on a mat, at about four o'clock in the afternoon. The exhibition is decidedly not for all and sundry and at the time of writing I have not discovered exactly who is present on these occasions. The basic reason for setting Mkalinga up outside his hut from time to time is the necessity to clean him, combined with the need to give him a look at the country and foretell the future. I personally find this the most interesting thing about him—the alleged ability to prophesy. The procedure is that the guardian scrutinizes Mkalinga carefully on these occasions and from his colour and appearance foretells what the year will bring—simple prophecies, of course, such as whether the year will be a good one for crops, whether the land will have troubles and so on. I am informed that the last time Mkalinga was given a look at the country was about five months ago and that his colour signified a good year and that all would be well. Certainly, after a late start to the rains, prospects improved greatly and Mkalinga does not seem to have failed to date. The procedure is for the chief, his wife and children to be called by Fomura after he has "read" the spear, and he then communicates to them the forecast—it is a family business and thus the ruling clan can get an idea of what is to be expected in the future. It is also a secret business—Chief Gwassa tells me that these prophecies are in no case communicated to the people or even to the major sub-chiefs. He admitted that it was possible that the report might leak out

and agreed that the last forecast by Mkalinga might be responsible for one major sub-chief's repeated assertions to me at a time when a failure of the rains seemed imminent, that all would be well.

II.—THE MULINGA

Mr. Tripe has some interesting things to say about this most attractive type of adornment. Incidentally, if anyone is in doubt as to how a Mulinga is worn he may see one on the left wrist of the guardian of the spears in the picture facing the second page of the December issue of *Notes and Records*. It may not be clear that these big Mulinga are usually welded on and normally stay on for life. I would also comment here that those few *Wazungu* who have obtained a Mulinga would do well to keep it carefully as it is now impossible to get them, and the time is not far off when the craft will probably die out as a result of failing demand, not to mention lack of material.

The practice of wearing Mulinga is dying out and but few young men or women acquire them nowadays—those seen are nearly all owned by the elderly. The reason for this desuetude is given as a growing recognition of the cumbersome nature of the ornament—it is indeed an appalling thing in which to hoe. I have in my possession a female Mulinga weighing seven pounds twelve ounces, and I have frequently seen women wielding a hoe with their wrist encircled by a Mulinga quite as big. The wearing of such a heavy object often results in the thickening and distortion of the wrist, which is not surprising when it is remembered that the Waha of the highlands have a peculiarly all-embracing action with a hoe, sweeping it high over their heads with extended arms until the blade is below their buttocks, before swinging it forward and down to the ground. There is little doubt that the disadvantages of the ornament are becoming increasingly felt and that civilization is slowly having an effect, firstly because other adornments, for example, coloured cloth, can now be obtained when a question of decoration only is concerned, and secondly, because the efficacy of the Mulinga as a sop to the spirits is no longer quite so implicitly believed by the younger generation.

Mulinga is an inclusive term and Mr. Tripe is not quite correct in saying that those of copper are the exclusive privilege of men whereas those made of brass are confined to women. Three types of Mulinga are concerned, firstly that of copper with a "nose", secondly that of brass with a "nose" and thirdly that of brass without a "nose". The first is normally worn by men and not by women, but there is nothing intrinsically wrong in a woman wearing a copper Mulinga and indeed they can be seen on the arms of some women especially those who have inherited from their fathers. The second Mulinga, often an exceedingly cumbersome object and usually bigger than the copper type, is essentially a female adornment and will not be worn by men, but the third type, the brass ring without the "nose", is usually a man's object. This ring is frequently large, heavy and with the outer edge triangular, and is referred to as Mulinga unless there is some reason to point the difference,

when it is called by its specialized name of Mufuguru. But women also wear Mufuguru on occasions and I have recently seen a woman with a six-pound Mulinga on her left wrist and an equally big Mufuguru on her right.

It may also be mentioned that both men and women frequently wear, on either wrist, what appears at first sight to be a small copper bangle. On closer inspection this bangle is found to follow the shape of Mulinga in that it has a "nose", but the "nose" is divided into two halves and not welded, and the bangle can thus be removed at will. I am told that these little bracelets are also properly called Mulinga, that they have the same significance as others when used as charms, and that they are worn by those who wish to use Mulinga without being over-encumbered. This, however, seems open to doubt as frequently these bracelets are worn in conjunction with large heavy Mulinga.

Whatever may have been done in the past, I am now told that the Swezi sect have nothing whatever to do with the granting of permission to wear Mulinga; it is a matter for personal taste and neither fee, *Tambiko*, nor visit to the royal insignia is necessary. In the case of sub-chiefs, it is courteous to inform the chief when they propose to wear a Mulinga for the first time, and if a man proposes to do so because he has been advised to propitiate his family spirits in this manner, he will first consult and inform the elders of his clan, and the fitting of the Mulinga will be a sign for a feast-day and the consumption of beer, but this is rather because of the propitiating of the spirits than for the actual wearing of the Mulinga. Nor is it correct to say that the Mulinga on the left arm is always connected with spirits; it is true that a witch-doctor may advise a man to wear a Mulinga on his left arm as a suitable way of appeasing the soul of his father, but there is no fixed rule. A son who has inherited his father's Mulinga will nearly always wear the object on the same arm as his father, but the fact remains that many Mulinga are worn on the left arm for a simple and sensible reason, namely that a man uses his right hand more frequently than his left and does not wish to be overburdened on the right. The usual way for a woman to acquire a Mulinga is by inheritance or as a gift from her husband; a woman may ask her husband to give her a brass Mulinga with a "nose" as a token of his affection, and no doubt the size of the adornment is frequently dictated by the husband's desire not to seem mean to his fellows. As the great majority of cultivation work falls on the wife, it is possible that some women wish their husbands had not been so demonstrative.

To sum up, the present position is that the wearing of the Mulinga is gradually going out of fashion, craftsmen are few and far between and the younger generation shows little loyalty to the cumbersome but attractive adornment of its elders. The wearing of the Mulinga is purely a matter of personal preference, and although these objects are in many cases advised by "doctors" as a sure way of bringing peace, prosperity and happiness through the propitiation of spirits, equally they can be used by men and women simply as a decoration and a sign of affluence. It may be mentioned that it is one of the tasks of a married woman to clean her husband's Mulinga (still on his

wrist, of course) before he leaves her hut in the morning. Some secrecy is observed over the process employed to fit a Mulinga; when a female prisoner at Kasulu had to have hers (a big one) taken off, it required a special *fundi* to split the "nose" with an axe!

III.—NOTES ON THE INSTALLATION OF THE MWAMI OF HERU

I have entitled this section of my article "Notes" and as notes they should be regarded. They have been compiled after talks with the Chief of Heru and are strictly limited in scope. They are, however, recorded as the customs with which they deal are gradually falling into abeyance and a failure to record such things when they come to light may result in their irrevocable loss.

(A).—Throughout all the installation ceremonies, especially those of *Tambiko*, that is the propitiation of spirits, the Wateko play a most important, though not always clearly defined, part. The Wateko are hereditary holders of an office which combines spiritual affairs with land wardenship; they are not officially recognized by Government or Native Authority, but woe betide any administrative officer who fails to appreciate their part in the tribal structure. For the purposes of these notes their chief interest is in the fact that they are indigenous Waha and that the Watussi overlords found them in the land when they first arrived. It is a sign of good statesmanship by the Watussi Chiefs of Buha that the Wateko play such an important part in their installations.

(B).—The new chief is proclaimed to the people by name and it is pointed out that he is the son of a chief and bears the name of a chief (the same names will recur repeatedly throughout a succession of chiefs). The idea of heredity and the divine spirit of the royal line is strongly developed and fostered by this emphasis.

(C).—As soon as the new Mwami has been shown the royal insignia (see Mr. Tripe's article, *Notes and Records*, December 1943) he begins hearing cases and giving decisions. Before seeing the insignia he has no power to do so.

(D).—No Mwami follows in possession of his father's plot. Each Mwami must build himself a house compatible in size with his position. A Mwami may build on his grandfather's land but not on his father's, and he must plant certain trees, amongst which is the *Mrumba* (Fig). The *Mrumba* to be planted by the Mwami come from the Buyenzi area of Buha, and the reason is that in the old days Buyenzi was a part of Urundi and the then sub-chief of that area was a man of great importance; he helped the then Mwami of Heru to obtain Buyenzi as part of his kingdom and since then every new Mwami has obtained *Mrumba* from Buyenzi to plant at Heru as a mark of respect to the Buyenzi sub-chief. Another tree comes from the Buhoro Bunganda area (from the country of Headman Kabwegwa) and this is interesting as helping to dispose of a question in local politics, as to whether Buhoro Bunganda forms part of the Heru chiefship or not (it undoubtedly does).

(E).—A *bibi wa kutambikia* is selected for the Mwami; she is a small girl, wife in name only, who stays under the care of the chief's senior wife for a while, then is sent back to her parents. She can then marry anyone she likes and is not sacred. There really appears to be no catch in being the *bibi wa kutambikia*, but equally there does not seem to be any advantage. Further investigation may, however, alter this view.

(F).—The trees planted by the Mwami at the time of his installation are planted over the buried stomach of an ox.

IV.—THE MWAMI'S SNAKE AND LEOPARD

The Mwami of Heru has his own *Tambiko* grove; this is at Vugizo on the hill opposite the residence of the present Mwami Gwassa. The treeless highlands of Buha contain several of these sacred groves—little clumps of indigenous trees standing out in sharp emphasis against the open country. I cannot state the type of trees in the Vugizo grove, but in one of the best in the country (that at Manyovu) which is not far away, one tree has been recognized by a forestry officer as a type of mahogany. In the grove at Vugizo reside, according to local lore, the Mwami's python and leopard, and at the time of the *Ndolegwa ya Mpeche* (see Mr. Tripe's article, *Notes and Records* for December 1943) the Mwami sends two goats for the leopard and a pot of honey for the python. The Mwami does not go himself but sends these things to the keepers of the animals; the honey is mixed with water and left for the python to drink at night, and the goats disappear, the keepers no doubt assuming leopard-like propensities in this instance. Personally, I should not be surprised if the grove did house a python—this snake is intensely sacred throughout Buha and represents one of the biggest *Mwiko*. There appear to be two distinct ideas at the back of its sacredness, one is simply that it is a reincarnated Mteko (see Section III (A) above) and therefore part of the very mists and swamps of the Muha's past, and secondly, that a python emerges from the stomach of a deceased Mwami and hence represents the divine spirit of all Mwamis, and especially the immediate predecessor. The python in the Vugizo grove is the spirit of the dead Mwami and nothing to do with Wateko; on the other hand Wateko are elsewhere closely connected with the *Tambiko* groves and I think it probable that not only in the past did Wateko actually keep python themselves but I would not be surprised to learn that some still could lay their hands on one if they wished to. In this connection Mr. E. H. Allinson, M.B.E., who has been for many years in Buha, has an excellent true tale to tell. Some years ago, while walking in part of the Heru Chieftdom he met an old woman dragging along a ten-foot python which was trussed up around the head with bark rope. This unusual sight called for inquiries, to which the old woman calmly replied that the python had been making a nuisance of itself by coming in at night and eating her chickens; she was therefore taking it along to the Mteko "to be punished". Note that

it was the Mteko, who would himself become a python at death, who was to punish the snake, and that no question of killing the intruder arose. I can think of no quicker way to incur general suspicion and mistrust than to kill a python in Buha!

6°20'S



DARES SALAAM

LATHAM
ISLAND



RAS KIMBIZI

TANGANYIKA
TERRITORY

ROUGH MAP GIVING
LATHAM ISLAND'S
RELATIVE POSITION

29°E

RUFITI
DELTA

RAS
MKUMBI

MAFIA

ISLAND

7°50'S

Fungu Kizimkazi, or Latham Island

By L. P. Lane

HAVING long wished to visit Latham Island, a bird sanctuary lying about forty miles east-south-east of Dar es Salaam and consequently somewhat off the beaten track, an opportunity occurred when least expected through the kindness of two friends. Although it is now included in the Zanzibar Protectorate, since the last war, the following note may not be out of place considering its proximity to the Tanganyika coast.

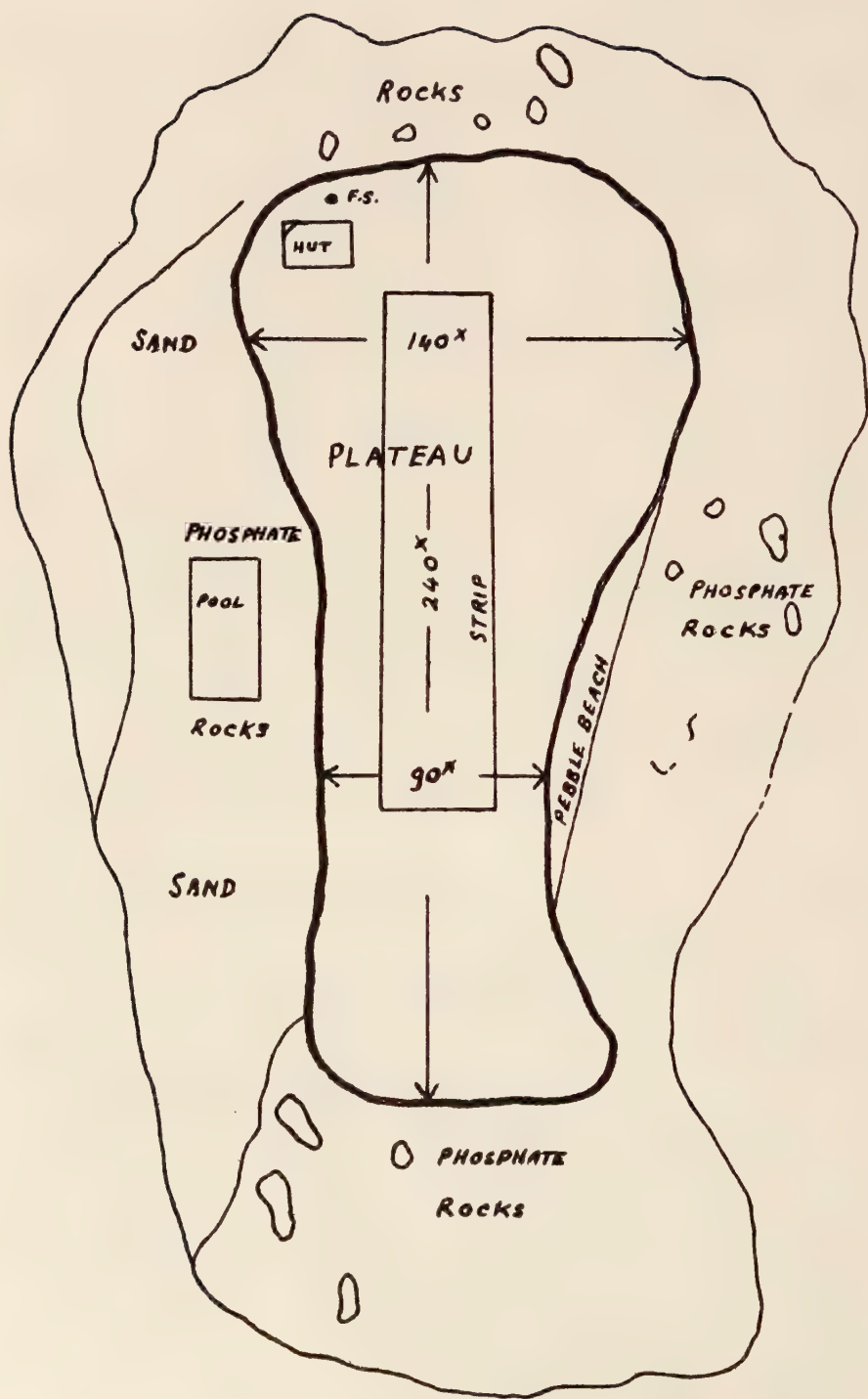
A concise and lucid reference to the island is contained in the *Africa Pilot*, Part III, 1939, from which was obtained the information here quoted :

"Fungu Kizimkazi or Latham Island, 6° 54' S., 39° 56' E., a low, dangerous, coral island, lies in the south-eastern approach to the Zanzibar Channel, about twenty-three and a half miles eastward of Ras Kimbiji.* It is ten feet high and its sandy surface has been flattened by the constant treading of sea-fowl into a soft sandstone which shines very white in the sun; with a bad light or at night, however, the island is very difficult to distinguish . . . Anchorage may be obtained either northward or southward of the island, depending on the monsoon, but the cross swell on the bank renders the anchorage uneasy; . . . in moderate weather, landing is practicable on a sandbank which shifts from one side of the island to the other, according to which monsoon is blowing, the sandbank being always on the lee side of the island. The current on the bank is variable but, in the deep water on either side of it, the current sets northward with varying strength; at five miles westward of the island the current becomes much weaker."

As for the island's birds, R. H. W. Pakenham states in his paper "The Birds of Zanzibar and Pemba" (*The Ibis*, Vol. 85, 1943), that, *vide* R. E. Moreau, the *Sulidae* of Latham Island are not *Morus capensis* (Malagas or Cape Gannet) but adult *Sula dactylatra melanops* (Indian Ocean Masked Booby), and that two adults and two nestlings taken from there in November 1918 were identified as such by the British Museum. Pakenham records having taken two of the former (*M. capensis*) on the north-west of Zanzibar Island but states that there is no evidence of their using Latham Island and that such a thing is regarded as extremely improbable. He also gives instances of single birds of the latter (*S. d. melanops*) encountered at sea north of Zanzibar between Tanga and Pangani and off Zanzibar Town.

So much then for pre-information; that which follows is divided for convenience into three sections, the first telling of the voyage and happenings

*The nearest point on the mainland of Tanganyika; the island lies approximately thirty-five miles south-east of the mainland of Zanzibar.—L.P.L.



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ROUGH SKETCH OF LATHAM ISLAND

blazing, splinters of wood were whittled into skewers and presently we were sitting around enjoying a drink and turning our respective roasts which we consumed with gusto at just the right moment and without civilized aids. In due course beds were spread on the sand and, free of mosquitoes or sand flies, we slept soundly until sunrise when a start was made on our various interests round the island. The dinghy arrived later on with breakfast and a boy to cook it, and having partaken and told the crew to return all gear and also to convey the turtle onboard alive, which was no light task, we resumed operations. At 10.00 it was decided that if we were to make Dar es Salaam that evening it was time to return to the ship. Delay was caused by the dinghy swamping again; the wind and swell had increased a little and it was then about two hours before high-water.

The vessel eventually sailed at 11.10. Whilst weighing anchor two large *mashuas* passed close to, seemingly fishermen on passage from Zanzibar to Mafia. About fifteen miles off the island a small school of porpoises joined up and kept us company for a couple of hours or so. With a favourable current and more wind the schooner made better going, although increased movement otherwise necessitated a careful balancing of luncheon utensils, and we arrived back at 18.40 after a passage of seven and a half hours.

The Island.—Latham Island lies practically north and south and consists of a plateau rising cliff-like from the surrounding reef, extending chiefly eastward of it, with rocks massed at each end. The plateau is composed of phosphatic limestone formed through alteration of the original coral by downward percolation of guano aided by atmospheric water. The rock is oölitic in form, grains of unaltered coral being cemented with calcium phosphate, and it is covered with a varying thickness of guano. The southern end of the plateau is slightly lower and there the cliff is crumbling on to the reef; its average height of ten feet was confirmed. A large sandbank lies along the west side (north-east monsoon) and about halfway along it a ridge of sand enclosed a fair-sized rectangular pool of seawater about two feet deep on a rocky bottom. The dimensions of the plateau which has a comparatively flat surface throughout are approximately as follows: Length, two hundred and forty yards; breadth, in the widest part, one hundred and forty yards, and in the narrow part ninety yards. It has a fairly hard surface generally, but there are several places where one's feet sink slightly into guano having a somewhat peat-like consistency. There are no trees or fresh water and the only vegetation, mostly on the east side and at the southern end, consists of a thick-stemmed, thick-leaved, ground creeper of the type common on many of our beaches, and a more delicate moss-like plant, the names of which were not known to the party.

On the north-west corner stand the ruined walls of a large hut built of the smaller boulders from the north shore and on the ground inside there were many weather-worn roofing timbers of sawn planks, some of which provided

our excellent firewood supply. A few steps north of the hut was the heel of a broken-off wooden mast with some initials and the date "Nov. 1918" scratched in the concrete base. It is not known to the writer whether the hut was built for former guano concessionists or possibly for a rumoured lighthouse keeper in German times (attached to the north-west corner of the hut is the remains of a cairn) but the date does not fit in with the latter; the date, however, may refer to the mast only, possibly erected later, and it coincides with Pakenham's note already mentioned about the taking of birds from the island.

A number of brown rats were observed at dusk mostly in the vicinity of the ruins and it is presumed that they can only keep alive by preying on the birds and their eggs and perhaps shore crabs. The skeleton of another turtle not quite so large as the live one found on landing was discovered wedged sideways in a fissure of coral at the south-west end of the plateau; the shell was peeling like a thin veneer and had lost colour whilst the bone-like substance of the under shell resembled thin weather-worn wood and could be snapped in the hands. Several sponges of varying sizes were found washed up on the beaches.

That the island is apparently the subject of native legend was learnt later. Supposedly haunted, ill-luck is reputed to attend anyone visiting it with harmful intent, a superstition fairly common, however, to lonely places devoid of human habitation.

Bird life.—The Gannets (*Sulidae*) inhabiting the island at the time of the visit would appear to be the Indian Ocean sub-species known as the Masked Booby* and, with the few exceptions mentioned later, were the only birds there. The following particulars were noted: Size about that of a Muscovy duck, white plumage with black primaries and tail, when standing show a broad black band on lower edge of wing, black mask, yellow eye, greeny-yellow bill which is straight and pointed, black webbed feet. Several birds had the wing band a rich chestnut brown instead of black and a very few had the head and/or upper neck brown. Young birds had white downy necks with dirty grey-brown plumage and bone-coloured bills, several of these of about adult size were seen running along the ground endeavouring to become airborne without success; the adult birds it was noticed required an appreciable run to "take-off".

By lucky chance the visit was made during the breeding season and many nests were observed usually consisting of a circular depression in the guano surface of the plateau, but sometimes not even that, and containing one or two eggs. The latter were chalky white with a green tinge to the shell, some being brown through staining—sizes of three measured were: 68×46 , $65\frac{1}{2} \times 44$ and 64×46 .†

*Probably the Blue-faced Booby of the Seychelles which nests in December to January, *vide* D. Vesey Fitzgerald's "Birds of Seychelles" published in *History of Seychelles*, 1940, using nomenclature after W. B. Alexander in his *Birds of the Ocean*, 1928.

†Compares, *vide* Roberts, with Cape Gannet 85×50 , Masked Booby 64×44 and 69×46 and Brown Booby 53×36 and 63×46 .

Several newly-hatched and featherless nestlings were seen and one egg examined had a hole at the side through which the chick was visible and audible in its efforts to emerge. No young birds were observed in the in-between stages of nestlings and the immatures already mentioned as being of about adult size. On the whole the birds were very tame, especially those sitting, who mostly allowed approach to within a few feet. These latter frequently made an up and down movement with the head and usually the egg or eggs were partly visible, being pushed out in front of the chest, and also some nestlings could be seen poking their heads out from under the bird.

The Gannets are very numerous and kept up a constant squawking and mewing whilst on or wheeling about over the island. At dusk on the 18th the writer rough counted five thousand birds settled on the plateau; this number was confirmed by another of the party who estimated their density as being an average of one bird to the square yard along the strip they habituated which was measured later. At 09.00 on the 19th there were about one thousand birds remaining on the plateau and an hour later some two hundred only. It was observed that whilst away fishing they departed towards and returned from the direction of the mainland and seldom was a bird seen further seawards. Their habitat was a narrowish, flat, guano-surfaced strip running almost the length of the island along the west side and mostly clear of vegetation, where they congregated facing eastward. This may, however, be a seasonal or otherwise changeable settlement for the rest of the plateau bears evidence of former use by the guano deposit.

A large number of corpses of these birds were found strewn about all over the island in various stages of decomposition, but none of very recent demise. The measurement of a culmen from a corpse was 96.* Unfortunately no note was obtained of the number of tail feathers which is a feature distinguishing the species.† It is considered that the peculiar odour attaching to the island is due rather to the corpses than to the guano although both may contribute thereto.

Fish is evidently the sole food of the Gannets and in this connection it was interesting to observe, on the morning of the 19th, a few partially consumed fish in various places chiefly at the north end of the island, one being alongside a nest containing a nestling. These were flying fish, about six to nine inches in length, with two pectoral fins only which are spread in flight; all were headless and generally intact from the tail to half or more of their length.

The only other birds seen during the visit were as follows: On the morning of the 19th, by one of the party, a bird described as resembling a Sand Grouse on the rocks at the southern end. Also, on the same morning by the writer, seven birds on the rocks at the southern end. The latter were standing together

*Compares, *vide* Roberts, with Cape Gannet 94, Masked Booby 108 and Brown Booby 101; this specimen however may not have been that of a fully-grown bird.

†*Vide* Roberts, the Cape Gannet has 12, the Masked Booby 16 to 18 and the Brown Booby 14.

and when disturbed flew off in company, returning later to settle on the rocks again; this was repeated two or three times, the birds remaining together in every case. Unfortunately, owing to the combination of their position and the sun, detailed observation was difficult but the largest was definitely a Curlew or a Whimbrel; the next in size were two fairly large Waders, white-fronted and apparently of greeny-brown plumage, with longish black legs and shortish straight black bills; the remaining four which were considerably smaller were plump and appeared to have red-brown plumage with white spots, short red legs and short bills. Captain la Fontaine of the schooner stated that during July a species of small grey birds nest on the island. He also said that excellent fishing was to be had at the anchorage and in fact a fair number of good-sized fish were taken by the crew during our short stay.

Three or four pieces of egg shells, other than Gannets', were found on the eastern edge of the plateau, well away from the strip. They were all smaller than those of the resident birds and, with one exception, alike; the single one of its kind was the smallest and had markings similar to the egg of a Kittiwake, the others were marked like a Common Tern's egg and measured approximately 50×38 .

NOTES

World Literacy

IN OUR last issue, No. 17 of June 1944, we published an article by Mr. J. W. T. Allen entitled "World Literacy" which contained (page 3) a brief analysis of the present position regarding Swahili literature in East Africa. Certain statements in this analysis have been queried by the Dar es Salaam Bookshop and the C.M.S. Bookshop, Nairobi; and we take this opportunity of presenting the other side of the picture by publishing the following extracts from communications received from them on the subject:—

Number of Books.

"... Mr. Allen states that careful perusal of the Dar es Salaam Bookshop catalogue, dated February 1944, gives these figures:—

Sixpence or less	...	...	...	19 books.
One shilling	...	...	...	22 ,,
One shilling and sixpence	...	...	...	5 ,,
Over one shilling and sixpence	...	...	...	11 ,,
Total				57 ,,

The list issued in February 1944 was not a catalogue but a stock list for the guidance of headmasters, etc., who wished to order books for immediate use. A full catalogue cannot be issued under present conditions owing to paper control regulations. The number of books available from time to time is as follows:—

Sixpence or less	...	...	...	34 books.
One shilling	...	...	...	24 ,,
One shilling and fifty cents	...	...	...	17 ,,
One shilling and fifty cents and over	...	...	...	18 ,,
Total				94 ,,

At the moment well over one hundred books have been translated or are on the waiting list for printing immediately the paper position improves."

* * * *

"Our agents in London say that of the books they themselves publish for Africa, their outstanding orders for books immediately required

(excluding new titles not yet published) now total half a million. We in Kenya have orders at our printer's for a quarter of a million and have other manuscripts not sent to the Press because it is useless to add to the congestion at the printer's."

* * * *

Kind of Books read by the African.

"Mr. Allen gives a list of books which he says the Swahili literate does not want (i.e. readers, primers, song books, school method, school geography, etc., and few readers want scripture). When I speak of a Swahili literate I think of the thousands upon thousands of adults who have been taught (or who have taught themselves) just enough to be able to read Swahili and their own vernacular. Some, it is true, are able to read advanced literature, but the majority of them do like just the books that Mr. Allen says they do not want. It is natural, they are only in the elementary stage of absorbing knowledge from books . . .

"In Kenya, Moslems apart, practically every reader wants scripture, and our publishing of religious literature (of which very little is sectarian) is only limited by the difficulty of getting books printed.

"Islamic literature has been on sale and is still sold (when available) at the Bookshop. The proprietors (the Society for Promoting Christian Knowledge), whilst aiming to promote Christian knowledge, endeavour to provide for the needs of all people of Tanganyika Territory irrespective of race, colour or creed."

* * * *

Distribution.

"The writer states: '. . . if the purchaser lives in Dar es Salaam, Mombasa or Nairobi, he can buy his book over the counter, provided he has taken the trouble to walk into the European quarter of the town . . .' A branch of the Bookshop is maintained in the New Market, Dar es Salaam, which is in the centre of the African quarter. It is staffed by Africans and open seven days a week for the sale of books. The average sales are two thousand five hundred books per month.

"Swahili books supplied by us are on sale in shops in most of the main towns of the Territory (for instance, two at Tanga, two at Moshi, one at Korogwe, one at Arusha, one at Dodoma and one at Tabora, etc.), to say nothing of the number of bookstalls organized by Missions which are not averse, I am certain, to selling books to non-Christians."

* * * *

"In Kenya . . . there are about one hundred shops and agencies from which Africans can obtain books, and none of them is in a European

quarter. In Mombasa our Bookshop is in a well-known Moslem district . . . In Nairobi our main Bookshop is on the Mission compound, and has never been moved to the shopping centre of the town (as it could have been to our profit), because we wish to do nothing to discourage the African book buyer . . . In addition we have Indian agents at strategic points in streets where the African does his shopping, and we have an African agent in Pumwani, the native location. As well as the shops in Nairobi and Mombasa we have agencies in every place possible. Some are on Mission stations, some are African-owned bookshops in the native reserves, some are Indians who sell our books as a profitable side-line. There are about one hundred altogether, and there would be many more if books were available in sufficient quantities. At the moment it is extremely difficult to maintain even scanty stocks at the agencies we already have."

It is unfortunate that the efforts of organizations—official and otherwise—and individuals to increase the supply of Swahili literature are so severely handicapped by war conditions; the present shortage of paper, printing machinery and labour is such that the urgent need for more books cannot possibly be met even half way. If Government schemes are not to lag behind in the post-war race, the first essential is to press for higher priorities for printing material intended for the production of reading matter for the African.—EDITOR.

Rhodes-Livingstone Institute

THE RHODES-LIVINGSTONE Institute are inviting applications for five research posts (four social anthropologists or sociologists, and one economist) in Northern Rhodesia and neighbouring territories. This expansion of research staff is made possible by a grant from the Colonial Development and Welfare Fund.

Details may be obtained from the Editor, *Tanganyika Notes and Records*; and from the Director, Rhodes-Livingstone Institute, P.O. Box 195, Livingstone, Norther Rhodesia.

The Origin of the East African Sisal

ON page 25 of *Tanganyika Notes and Records*, No. 17, the following statement is made: "In 1905 the first sisal ever introduced into East Africa was planted at Kikowe, just south of Pangani River, by a German who smuggled the seed from South America". It seems desirable to try to slay this legend before it gains any general acceptance. The truth is as stated by Hindorf in his book *Der Sisalbau in Deutsch-Ostafrika* (Berlin, 1925). Sisal was introduced from Florida in 1893: From the first importation* sixty-two plants were obtained. In 1898 six hundred kilograms of fibre were exported; by 1905 the export had already grown to one thousand one hundred and forty tons in the year.—L. R. DOUGHTY, *Geneticist, East African Agricultural Research Institute, 26th August 1944.*

*Dr. Hindorf told me they were bulbils; sisal rarely produces seed.

The African Elephant and its Hunters

WITH reference to G. G. Rushby's interesting contribution on "The African Elephant and its Hunters" in *Tanganyika Notes and Records*, No. 17. It is, however, generally agreed that the tusks of the elephant are the second upper incisors of the typical mammalian dentition.

Many years ago two tusks, weighing respectively two hundred and thirty-five pounds and two hundred and twenty-five pounds, from the Kilimanjaro District, were sold in Zanzibar for seven hundred pounds sterling.—H. M. FISHER, *Dar es Salaam, 5th September 1944.*

Crocodile Gall

By W. Joergens

DURING my hunting safaris in 1934 in the neighbourhood of the Iringa-Kilosa Road I often met Mr. A. M. B. Hutt, who was the District Officer of Iringa at the time. The natives who lived in the vicinity of the Kitonga-Mahenge-Mtandika section of the road suffered considerable loss on account of crocodiles which seized many sheep and cattle when drinking in the Lukosi River. I was particularly fond of hunting crocodiles because these reptiles are very wary and stalking them needs a great deal of care. It is also essential that one's first shot penetrates the brain, otherwise the reptile dies in the water and the hunter loses his trophy. The natives were, of course, delighted every time a crocodile was shot, as it reduced the mortality among their sheep and cattle.

Mr. Hutt advised me to burn the bodies of crocodiles shot by me, in order that the natives should not obtain possession of the gall which is poisonous and which might be used by them to poison their enemies, etc. I followed Mr. Hutt's advice. It always took two days before a ten- to twelve-foot crocodile was completely burnt. At the time I did not believe that crocodile gall was poisonous. During subsequent hunting safaris I made further inquiries from natives on Lake Rukwa, in the Usangu plains west of Malangali, and near Kilimanjaro, and all agreed that crocodile gall is a poisonous substance.

On the 24th August 1936, at Mahenge on the Iringa-Kilosa Road, I succeeded in shooting a crocodile measuring ten feet and eight inches. I removed its gall-bladder which was as large as a duck's egg and which weighed about seventy to seventy-five grammes. After its head had been severed from its body for about one to two hours, its heart was still beating. The liver was coloured dark green to black, as was the gall. Some of the gall oozed from the bladder and it stuck to glass like shellac. After the gall had been poured into a bottle, I added denatured spirit to preserve it, and the bottle was then corked and sealed with wax. The preserved gall was taken to Germany for analysis in January 1937. In a chemical factory in Bielefeld it was ascertained that the gall contained carbonic acid for which the chemical formula is $C_{24}H_{40}O_5$. It was also found that half a gramme of this gall caused paralysis in a live animal weighing one kilogram and that the animal died after a period of five days.

As the crocodile is a scavenger, I consider that it would be of interest, from the scientific point of view, to ascertain whether other scavengers, such as lions, leopards, vultures, etc., have a poisonous gall similar to that of a crocodile. The natives maintain that snake gall is poisonous also.

Mr. G. G. RUSHBY adds the following note :

Crocodile gall is well known as a native poison in many parts of Africa. In Tanganyika it is well known among the natives of Rufiji-Ulangu and Nyasa, who are said to use it. A chief of Ifakara, Ulangu District, died some years ago, and four or five other men with him, after drinking from the same pot of beer : rumour had it that they were poisoned by someone who had surreptitiously introduced a dash of crocodile gall into the pot of beer. There are certain tribes who eat crocodile meat; the Mawia are one, but they take great care not to use any of the liver or parts adjoining the gall-bladder. In many parts of Africa crocodiles are cannibalistic and will eat the remains of any crocodile shot. I do not know if they are immune to this poison—probably they are. The gastric juices of the crocodile contain a strong solution of hydrochloric acid and if one holds an autopsy on a carcass (which one usually does if one has been hunting for a bad man-eating crocodile to make sure it is the right one by examining the stomach contents) it is best to smear the hands with grease, otherwise the skin is apt to get severely burnt.

The gall-bladder of snakes is said to be poisonous, and also the contents of the gall-bladder of the chameleon. These poisons are well known among many African tribes who are said to use them on occasion. The gall-bladders of iguanas and other reptiles are said to be non-poisonous.

The symptoms of gall poisoning are high temperature, ague, coma and then death. The time taken to die depends, I suppose, on the amount taken, but normally the poison takes about six hours to kill a person. The gall of crocodile is said to be much more potent than that of the snake or chameleon. There are antidotes known to medicine men which cause vomiting and if taken in time prevent death.

A Bush-buck running with a Troop of Baboons

By W. H. Cooper

IT WILL PROBABLY come as a surprise even to experienced hunters to learn that a bush-buck was living with a troop of baboons. It was my wife who first saw the buck running across the road with a troop of baboons near Korogwe, Tanganyika, in 1938. Investigating if the buck did really live with the troop, I was lucky enough after a few days to get fairly close up to the troop in a rubber plantation. I found that the buck was one of the family; the small baboons would climb on to the buck's back and play or feed very close up. It was noticed that female baboons with very small young would bare their teeth if the buck came too close but the buck did not appear to take any notice of this. Some time after this observation, a troop of baboons raided the orange orchard near my house and, as baboons had been very troublesome, I decided to take the gun and get up to them from the rear. When I was about two hundred yards from the main raiding party a bush-buck came running in my direction and passed within five feet of me, and a few seconds later the guards gave their warning and the troop rushed off. I do not think the buck saw me on its approach as I was hidden behind a bush, but it did see me as it got past the bush where I was hiding and immediately swerved off, and later joined the troop of baboons. It is known that a troop of baboons have their scouts and guards and it looked to me as though the buck was acting as a flank guard.—*Ngambo Estate, P.O. Amani.*

CORRESPONDENCE

THE EDITOR, *Tanganyika Notes and Records*.

Dear Sir—The three articles on "World Literacy" by Mr. Allen; "Reconstruction in Relation to Revision" by Lieutenant-Commander Lane; and "The Labourer and his Hire" by Mr. Culwick, in your No. 17 of *Tanganyika Notes and Records* deserve sincere congratulations to the contributors; and comments and suggestions on the side of the administrator and readers of your journal.

Much has been, and is still being, talked and written; but, alas, everything talked or written is filed away and put into the pigeon-hole for ever. It is no good talking, or writing, without putting what one thinks, talks or writes into practice. "But be ye doers of the word, and not hearers only deceiving your own selves. For if any be a hearer of the word, and not a doer, he is like unto a man beholding his natural face in a glass: for he beholdeth himself and goeth his way, and straightway forgetteth what manner of man he was. But who so looketh into the perfect law of liberty, and continueth therein, he being not a forgetful hearer, but a doer of the work, this man shall be blessed in his deed."—St. James's Epistle, 1: 22.

What I think is suitable for the Tanganyika Territory to-day is that the Planning and Development Committee should include representatives of all communities.

There is no solution for the three articles I have mentioned above except a thorough systematic campaign on agricultural education, for which they bear testimony.

In Mr. Allen's article on page 2 he says: "We say that we do not want to take the peasant off the land but we want to educate him: the education that we give him is valueless to him unless he takes a clerical career. Then we are surprised that those who accept our education look for such careers, and those who do not wish for such careers see little profit in coming to school." Here Mr. Allen gives the pure truth; the African has been taken from his profession (farming) and something has been substituted in its place which has never and will never be suitable for him. He took to paid jobs because he was not taught the science of his own profession, and drawn forward by the love of money he accepted what was offered him. The only thing to do now, is, "to begin again at the beginning" as Lieutenant-Commander Lane says on page 10.

Also Mr. Allen's page 2, "all education should be in English". Swahili is the lingua franca of East Africa (especially Tanganyika Territory). A child learns Swahili at home and at the kindergarten schools, which he attends, while living with his parents. So I do not see why after passing the vernacular standards he should not be taught English. With regard to literature, there is very little in Swahili, so the adult is very poor in this line. So if Mr. Allen's proposal of a Director of Publications (page 5) would be approved and adopted it would relieve the African peasant to get enough literature in his own language, nor will it end there, but he will have the wherewithal to send his articles on different subjects for consideration with a view to publication. It is a wonder, so much money

being spent by the Education Department and the Inter-Territorial Language Committee in prizes for different competitions; but, alas, nothing of those prized papers has as yet been printed.* I do not find any profit or encouragement in this line for more African literature. It would be far better to accept good papers for publication rather than to prize them and put them in files and pigeon-holes and forget them.

The Director of Publications could do much for the Territory's literature.

On page 11, Lieutenant-Commander Lane emphasizes agriculture as the initial mainstay of the Territory, and following on that comes hygiene, dietetics and housing, three very important items to agriculture. For good labour in one's farm comes of a healthy well-fed body, rested in a good house. As to finance, page 13, "war conditions have certainly shown us what can be achieved through local voluntary subscriptions organized in aid of good causes". I do not see why while so much money is offered to war charities, etc., could not a similar campaign be organized for the development of the Territory; meanwhile, the lumps of money already deposited in war bonds could provide us with the stepping stone on starting this campaign. So why should we fail in such a good cause if we are really of one mind? The Dublin Society is a sure sign.

Mr. Culwick's page 27: "They want to be clerks and doctors and overseers of other men's work". They want that because when leaving school they find themselves hampered, without any capital to start on, and because they were taught at the desk, their muscles shrink from hard labour. So for a refuge they turn to clerical duties or any other men's work for wages. The only best education suitable for the African is agriculture, not taught theoretically at the desk, but a combination of theoretical and practical science on better methods of farming, this is his profession by nature. All other subjects come second. On page 31, Mr. Culwick says: "This country is primarily an agricultural one, and it seems that agriculture is destined to remain its economic backbone for as long as we need consider at the moment. The raising of the Africans' standard of living by the increase of real wealth, therefore, depends on us being able to get the most out of our land without ruining it in the process. This, I venture to say, can never be achieved by the type of peasant farming we now know in which each family strives to raise all, or nearly all, its own food, forcing the native to use land for purposes for which it is not really suitable". What the Tanganyika Government ought to do, is to start and run an Agricultural College, with a fully qualified staff on agriculture and with a fully equipped laboratory. This college should give theoretical as well as practical tuition in agriculture. Something similar to the Tuskegee College, of Booker Washington, in Alabama, U.S.A., must be adopted and run in this Territory if we are to get good, intelligent and hard working farmers.

The success of a nation is not measured by the fortunes of the few but by the prosperity of every citizen.

You will excuse me for any shortcomings in this letter, and at the same time bearing with me that, my real aim is not to contradict what has been said in the three articles, but to stress on them, that what they bear are vital agencies to spur us on the highway to the development of our Territory if we adopt the right course.—*Yours faithfully*, PETRO CH. MNTAMBO, P.O. Box 511, Dar es Salaam, 6th September 1944.

*The C.M.S. Bookshop, Nairobi, has this year undertaken publishing on behalf of the Sheldon Press, while the Inter-Territorial Language Committee is making arrangements with them to publish selected essays from the Swahili Essay Competitions.—EDITOR.

