

TANGANYIKA NOTES AND RECORDS

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Editorial Note

IN SPITE of the war, we have been able to produce (admittedly rather late) yet another number of *Tanganyika Notes and Records*. Many of our subscribers and several of our old contributors are now serving with the forces. We take the opportunity of wishing them good luck, in the hope that this volume will help in some measure to keep them in touch with those fruitful avocations which a high duty has caused them temporarily to forsake.

We recognize that it is difficult at present to find the leisure, or indeed to feel the inclination to spend time on things that do not directly assist our country's cause ; we nevertheless again appeal to all who are interested in the continued success of this journal to support it by sending material for publication.



Vugiri: Original site



Vugiri: Present site



A part of Mlalo Town

Illustrative maps will be found in the pocket at the back of this volume

Land Tenure of the Wasambaa

By E. B. Dobson

I.—METHOD OF INVESTIGATION

FOR the reader to be able to gauge the reliability of the facts and the value of the information contained in this treatise it is necessary to begin with an apology and an explanation. The writer, though possessing a working knowledge of farming, is neither an anthropologist nor a lawyer. The difficulty of obtaining precise information from Africans, and the vast extent of the subject, inevitably means that there is a liability to error, and that this must be regarded only as an introduction to the subject. Whatever its shortcomings it does, however, claim to be an attempt at tackling a matter which is of great administrative importance—the land tenure laws of an African tribe.

The investigation deals with the native rights and laws of land tenure observed by the Wasambaa, who live in the Usambara mountains in the Korogwe District of the Tanga Province of Tanganyika, which laws are now administered in the Native Courts of the district. The Wasambaa have spread into the plains on all sides below the precipitous scarp of the mountains, but owing to their admixture with alien natives in the low-lying regions, this investigation has been confined to the hill country where pure Sambia custom reigns, and where, in fact, the bulk of the tribe resides.

The first step in the investigation was conversations, which sometimes lasted for days, with sub-chiefs and elders taken in turn from the various sub-chiefdoms of the district. The information received from different areas was carefully compared and conflicting points noted. Conversations were also held with two pastors of the German Bethel Mission, Pastor Gleiss of Bungu and Pastor Wohlrab of Mtae, both of whom have lived for over thirty years among the Wasambaa.

An area was then chosen—a purely native area centring on the headquarters of the sub-chief of Vugiri—for a detailed survey. With the help of the local elders, who know the boundaries and history of every field, comprehensive maps were made which show the nature of the division of land and its purposes more clearly than many pages of print. The accuracy of these maps and the figures gained from them can be vouched for, since the writer personally measured and marked every field on the map. At the same time conversations were held with the occupiers of the land and their wives. A great variety of information, offered spontaneously, was gained in this way; the statements heard in talk could be seen translated into living reality, and any tendency to translate native terms into stereotyped and quite incorrect English equivalents checked. Although the writer has visited most parts of the district, it is regret-

ted that an opportunity was not found to do one or two more detailed surveys in different parts, since customs must necessarily vary somewhat from place to place.

There followed more talks with numerous persons, and the checking and counter-checking of information. Finally, the laws, as they seemed to be, were submitted to a gathering consisting of the chief, two of his sub-chiefs and some twenty elders for their comments and arbitration on disputed points. Each point was discussed in detail, and since they themselves are anxious that their laws should be recorded correctly, it is fair to assume a certain amount of accuracy in the final result.

I should like to record my thanks to Major L. A. Notcutt, M.C., Mr G. D. Popplewell of the Administration, Mr H. R. Herring of the Forest Department, Mr H. Gillman of the Agricultural Department, Mr R. E. Moreau of the Amani Institute, Pastor Wohlrab and the late Pastor Gleiss of the Bethel Mission, and to my husband, for the help they have given and the interest they have shown in this investigation.

II.—USAMBARA

The country of the Wasambaa is a mountainous region consisting of massive blocks of gneiss thrust up precipitously from the great south-east African plain. The eastern edge of the mountains is twenty-five miles from the coast, Tanga being the nearest port; the north-western edge is some one hundred and twenty miles south-east of Kilimanjaro. Between the latter and Usambara lie the Pare mountains. From the north there is an uninterrupted view of the Uмба steppe and plains extending to and over the Kenya border. The railway from Tanga to Moshi runs along the foot of the Usambaras on the south and west before crossing the Mkomazi valley to the Pare country.

This mountainous region is divided into three blocks by deep valleys running north and south; the Luengera valley, dividing the East and West Usambaras, and the Sigi valley which cuts off the Mlinga-Magrotto ridge from the East Usambaras. This latter ridge does not, however, concern us as it is not largely populated by Wasambaa and is in the Tanga administrative district.

The West Usambaras are higher and more precipitous than the East, but everywhere the mountains rise steeply from the plain to heights of three thousand feet increasing to seven thousand feet in the west. Owing to the precipitous nature of the scarp easy ways of ingress from the plains are few. The three main routes are the roads from the three railway stations, Muheza, Korogwe and Mombo.

There still remain large areas of rain forest in the mountains, and these are now mostly preserved by the Forest Department or the Native Authority (see map I).

Because of the steepness with which the mountains rise from the plain, rather than because of their actual altitude, the climate is cool and pleasant and in most parts there is abundant rainfall, although this varies considerably from place to place. For this reason the country was looked upon with favour

by the Germans when they first penetrated to it, and large areas were alienated to Europeans by their government for coffee estates and mixed farms. Under the Land Ordinance of 1923 the British Government, while recognizing the rights of those who had obtained land freehold or leasehold before this date, stopped all further alienation of land in the Usambara area.

For the purposes of this investigation, only the actual mountain regions have been taken into consideration, since it is in the mountains that the customs of the Wasambaa have remained purest, and the bulk of the tribe reside there. All along the railway line at the foot of the Usambaras are large tracts of land alienated for sisal estates. These estates necessarily entail the bringing of numbers of recruited labourers from far distant parts. Those Wasambaa (and they are comparatively few) who have descended from the mountains to the plains mix with these detribalized natives and their own tribal customs suffer in consequence. In addition to these alien natives there are many Wazigua living in the plains within the boundaries of the Sambaa country, who have come over the border from their own land to settle. The sub-chiefs of Makuyuni and Mkomazi, although they are under the chief of the Wasambaa, are both Wazigua. Owing to the difference in climate between the plains and the mountains the crops cultivated are quite different, and so the customs vary also. For all these reasons it has been considered advisable to restrict this investigation to the mountain regions.

The country, although mainly occupied by Wasambaa, contains quite a large settlement of Wapare on the west side of the western block. Most of these Wapare have lived for many years in the Usambaras and usually conform to Sambaa custom. Also in the West Usambaras there is one minor jumbe's area consisting almost entirely of Wambugu. It is not known exactly when this tribe came down from the north and settled there, but they still retain their own dress and are easily distinguishable from the Wasambaa. In spite of the difference in appearance, however, they also conform to Sambaa custom and are considered as natives of the country by the Wasambaa themselves.

The soil all over the country is mostly reddish in colour and varies from loam to sandy loam. In many places there is a rich layer of humus on the top on land that was once forest, and this makes it very fertile until the humus is exhausted—a fairly rapid process. The necessity for the natives to cultivate perpetually on hillsides makes soil erosion an acute problem and large tracts of land, particularly in the Mlalo and Mlola areas are badly eroded. The Agricultural Department has made strenuous efforts to combat this evil with the pleasing result that everywhere contour hedges can now be seen.

The Wasambaa are primarily arable cultivators, but they are nearly all cattle keepers as well. Although in most parts of the country they drink milk, cattle are kept as wealth and are seldom killed either for food or hides, except in places settled by Europeans. There appears to be absolutely no connection in the native mind between arable and stock farming, the two being regarded as entirely separate.

The two main food crops grown by natives all over the country are maize and bananas and these, as well as forming the staple diet of the people, are sold in large quantities on the plains along the railway line—chiefly for feeding recruited labour on sisal estates. Besides these two crops the natives grow sweet potatoes, English potatoes and cassava both for consumption and sale. Small quantities of leguminous crops—peas and beans of all kinds, sugar cane, tobacco, European vegetables, kweme nut, wheat and coffee are also grown for consumption and sale. On the plains at the foot of the hills cotton, rice and maize are the chief native crops.

There are three planting seasons in the mountains, "Mwaka," "Mulwati" and "Vuli." The seasons used for the main planting vary according to altitude and locality (see map II). The Mwaka rains are in March and April, the Mulwati rains in August and September and the Vuli rains in November and December. In most places one season only is used for the corn crop, but the fact of having three rainy seasons makes it possible where a crop has failed for a man to plant again in the same year and so save a total loss.

III.—WAKILINDI

The Wasambaa were originally administered according to Bantu custom by elders; there was no paramount chief. It is said, however, that the elder who lived at Vuga—the present chief's seat—was looked up to and respected by the rest of the mountain people. Little is known of their history until the coming of the Wakilindi, the now ruling caste, who imposed themselves on the original inhabitants as many other conquerors imposed themselves on Bantu tribes throughout African history. The Wakilindi are now Wasambaa as much as the Wasambaa themselves, but they remain the ruling class, and describe themselves as Wakilindi.

The story of Mbega, which is the story of how the Wakilindi came to Usambara, has already been published in *Tanganyika Notes and Records*, Nos 1, 2 and 3. Briefly it is as follows: A man called Mbega, born in the Nguu hills and who lived there for a time at Kilindi, migrated to the country of the Wasambaa. Here he became known for his prowess as a hunter, and for the cunning and skill of his hunting dogs. He was invited to rule over Bumbuli—now one of the largest sub-chiefdoms and a traditional centre second only to Vuga in tribal importance. Thence he was invited to Vuga where he became paramount chief and is said to have ruled from the mountains to the coast, successfully repelling the predatory inroads of the Wapare and Masai. His sons became sub-chiefs of subordinate areas under him, and his son Buge inherited the paramount chieftainship. His descendants have occupied the position to this day. The time of Mbega's arrival in the hills may have been anything over two hundred years ago. This romantic figure is said to have been half Arab. It is conceivably possible that this accounts for the fact that many of the Wakilindi to this day are distinguishable by their lighter colouring and clean-cut features, a notable instance being the present chief himself.

It was Mbega and his son Buge who made the Wasambaa into a closely knit tribe. Their descendants, less powerful personalities, lost the vast stretches of plain that had been ruled by Mbega, and during the last fifty years the domain assumed its present proportions, that is, the Usambara mountains and the plains immediately surrounding them.

The present chief of Usambara, Shebuge, is a direct descendant of Mbega, and of the seventeen sub-chiefs who now rule under him all are Wakilindi, with the exception of two in the plains below the south-western scarp, along the railway line, that is, the sub-chiefs of Mkomazi and Makuyuni, and one at the northern end of the Luengera Valley, Mashewa.

Mbega's two eldest sons were called Buge and Kimweri. The present chief is known as Shebuge, and his predecessor was Kimweri. The next chief will be known as Kimweri and so on. The two names have now been elevated into titles, which are used alternately by occupiers of the chair at Vuga.

Vuga, a small eminence amid the broken mountains that rise east of the Soni river rift, is still the headquarters of the chief, and the centre of the Native Administration. Round this hill are the marks of wide steps cut into the hillside where at one time tier upon tier of huts surrounded the hill. Peaceful times render it unnecessary for the inhabitants to live clustered on defensible hills, and lack of water and the final destruction of all trees in the neighbourhood made further building difficult. The site of the traditional town is now deserted, except for the ancestral graveyard where the chiefs are buried. The present chief's and the native authority headquarters are on the low slopes of the hill. The chief is interesting himself in the local native administration forest reserves, whence he hopes new building poles may be found, for it is his ambition to rebuild Vuga and restore the glories of the historic seat.

IV.—AUTHORITIES IN LAND RIGHTS

It is necessary to consider once more the history of the Wasambaa in order to understand who are the authorities in matters concerning land. The rule of the Wakilindi was superimposed on the original Bantu rule of the elders, and this explains the somewhat complicated system that now exists.

The whole of Usambara (excluding alienated land) is said to belong to the chief, but it is clearer to say that it is vested in the chief who holds it for the tribe. The chief, as has been previously explained, is an Mkilindi and a direct descendant of the original chief, Mbega. His headquarters are at Vuga, the traditional headquarters of the chief.

The position of chief is inherited in the male line, although it is not necessarily the eldest son who inherits. Normally, the old chief nominates the son who is to rule after him, but his council of elders will be consulted in the matter. Should the chief die without male issue (this has not yet occurred) the most suitable of his nearest of kin will be chosen.

The system of rule is essentially democratic; only an entirely superficial view could conceive of the chief as wielding anything approaching despotic powers. An ingenious system has been evolved, as in many other African

tribes, where a leader has been chosen, who in theory holds the land in his power, and the people in his hands. His office, and in the case of the present ruler, his person, command the greatest respect; he is all-powerful; his leadership is sacred. The tribe gave itself up to the leadership of his ancestors, and the relationship persists through generations. The people had to have a leader in war and a law-giver in peace. Divided control led to disaster; a strong executive was essential.

But while the first Mkilindi was appointed to rule over them in this almighty position, it was not by conquest that he assumed office. It was by invitation of the elders, who do, in fact, among a race where age is still respected, represent the people. The elders may seem a little reactionary to the young of to-day, but fundamentally they are representative of general feeling. The elders, having invited the first Mkilindi to be chief, constituted themselves his council, and without this council the chief could not act. He was there by invitation, and the elders had no intention of passing out of the picture. This, we may assume, was how the relationship began. The chief fitted himself on to indigenous Bantu custom; he came not to destroy, but to be inserted as headpiece of the edifice.

He remains in these times the chief executive, but custom demands that even in unimportant executive matters the elders should be consulted. In his legislative and judicial capacities he cannot function apart from his elders. If he did, his office would cease to be respected; in fact, he would never think of doing so. In council he is president, and his opinion may be a deciding factor, but without the council he cannot act. In practice, the chief and elders agree; as in a British jury there must be complete agreement, which, after discussion, is always arrived at. This ability to reach agreement is African genius. The degree of personality of the chief will, of course, decide to what extent he sways the council.

In practice the elders settle a vast number of affairs themselves, including many land disputes; they wield considerable powers by reason of their influence. Though their decision cannot be enforced except in Court, their rulings are not often questioned. Important matters, and matters in which their decision has been questioned, will be referred to the chief, who will hear the matters with the elders in open council.

This democratic system, without any cut-and-dried definition of powers, works because it is based on popular consent. It works in public, it never works hurriedly, but after due discussion and consideration. Aggrieved parties are argued with until they see the error of their opinions.

The chief has seven elders (*Waghoshi wagima* or *Wazee wa Nchi*) members of his council. They are elected, by the same system of discussion and agreement, by the elders themselves. Their offices are named as follows:—

Mlugu	Mbeleko
Mdoembazi	Mkaoneka
Mdoe	Mbaruku
Mdoekuru	

These titles are placed in order of importance. They do not imply any particular function. Their duties are manifold and cover the whole field of administration. The chief will send them out all over the countryside on his commissions. In order of seniority, as recorded above, they will deputize for their chief in his absence. Their position is recognized by Government, and they receive a small salary from the native treasury. But the chief source of income is in the presents which they receive from the parties to the disputes they settle. These presents may vary from a goat to a field. Custom ordains, however, that they should be given. They are in no way in the nature of a bribe; they are simply fees, paid openly, for services rendered.

The chief's elders are, of course, subordinate in rank to the sub-chiefs, and could not issue orders themselves to a sub-chief (*zumbe*). They may, however, be purveyors of the chief's orders to a sub-chief, and if so, the latter must obey.

The chiefdom of Usambara is divided into seventeen sub-chiefdoms, each under a sub-chief who, like the chief, works with his council of elders or *Waghoshi wagima*. This unit of administration covers the whole field of local administration subject to the orders of the chief in council. It is, properly speaking, the smallest unit of administration which holds a recognized status in the tribal government machine. The sub-chief, though his powers like the chief's are limited by the necessity of agreement with his council, wields considerable power and influence.

The sub-chiefs are usually Wakilindi, though not always. The post is not necessarily inherited, although a sub-chief's son will in practice often be chosen to succeed him, if the chief and his elders consider him suitable. The chief and elders also have the right to turn out an unsuitable sub-chief from his post and replace him with a man of their own choice.

It is generally considered that the people must consent to the chief's choice of a sub-chief to be put over them, but when the appointment of a new sub-chief of Mashewa was necessary in 1938 the chief and his elders asserted their right to impose one whom they considered suitable and to reject the people's candidate. It was an interesting case of the rulers and representatives thinking they knew better than the people and persuading the people to agree. The chief's action was considered to have been based on sound reasons and received the approval of Government.

The council of elders of the sub-chief is in exactly the same relation to him as the chief's council of elders is to the chief. They perform the same duties and are paid salaries by the native treasury and are elected in the same way. The names of these elders vary from one sub-chiefdom to another, but there are usually six of them and the order of precedence is as follows:—

Mdoe or Mbilu	Nyungu or Mwakihiyo
Msheshe	Mashina or Mwambashi
Mkaoneka	Zumbe ya Bwene

It must be understood that these elders and those of the chief are the only ones that are called by special names, and the only ones who hold an official

position in the tribe. There are many, as it were, unofficial elders, who settle up quite a number of small matters, but this they do because they are people of established position and a certain age, and not by virtue of any official status.

Under the sub-chief and his elders are a number of village headmen. It cannot be too strongly stated that these men are of very little importance in the scheme of tribal organization. They are appointed by the sub-chief and elders and are under their orders. Their chief duties are to collect tax, and to bring any local matter to the notice of the elders for settlement. Though the office of minor *zumbé* is not one that commands any great respect according to indigenous tribal ideas, the necessity for executive in smaller units than the *zumbé* is leading to a gradual enhancement of the powers and prestige of this office. Government has to have a unit of executive power smaller than the *zumbé* for various modern purposes, tax collection, police, enforcing of rules concerning soil conservation, prevention of tree destruction and the like. These duties have for the most part only arisen in recent years, and the Administration find it convenient to use the headman as an executive to deal with them. There is a tendency, therefore, for him to become more and more a person of authority, as a policeman and an enforcer of Government rules, but it is wise to bear in mind that in native eyes there is less prestige attached to his office than is often supposed.

The chief, the sub-chief and the elders all have the right to demand men for work on their shambas. This appears to be a relic of the old days when every man had either to pay tribute or do so much work for his chief. In actual fact there seems to be very little compulsion in the matter these days, and the men who do the work will receive payment of goats and beer according to the amount of work done.

It will be seen that under the British Administration the tribal structure is functioning on much the same lines as those on which it was functioning before the arrival of the European. The offices of state have received official recognition; the chief has been appointed a native authority under the Native Authority Ordinance. Government tax has replaced tribute to the chief, but of this tax a proportion is repaid by Government to the Usambara native treasury, of which it represents the chief source of revenue. The native treasury pays regular salaries to the chiefs, sub-chiefs and other officers, clerical staff, etc., and maintains various social services for the benefit of the native community. The treasury is administered by the native authority under the supervision of the District Officer.

Under the Native Courts Ordinance each of the sub-chiefs has a native "B" court. The chief has a native "A" court and there is also a right of appeal from the "B" courts to the chief's court. Appeals may be made from the chief's court to the District Officer, then to the Provincial Commissioner, and finally to the Governor.

These are the courts to which disputes over land are referred. In practice appeals from the native courts to the District Officer in land matters are very

few, though the native courts are occupied with a number of such cases. The vast majority of land disputes are settled out of court by the elders, who know every inch of the land, can recognize to us invisible boundary marks, and will remember the owner of a piece of land who has left the country twenty years before. If a case goes before the sub-chief's or chief's court it is because the elders have failed to reach a settlement. There is no bad feeling over a case being taken to court; it is considered only proper if the parties are not satisfied, and appeals to higher authorities are considered natural and not contrary to the principles of native custom.

V.—TRIBAL LIFE

The Wasambaa live in villages varying in size from four or five to twenty or more houses clustered close together. In the olden days their villages used to be very much larger and were placed on inaccessible pinnacles as a protection against Masai and Wapare raiders. Since the coming of the European the people have tended to move to more accessible spots and to reduce the size of their villages, but they still prefer to live in groups rather than in houses on their shambas. At the sub-chiefs' headquarters at Mlalo and Bumbuli the original towns remain very much as they have always been; both are built on fortress-like hills with an extensive view on all sides and the numerous houses are crowded close together in a small space. Many people now build houses on or near their shambas for purposes of convenience when it is necessary to be on the spot to keep off pigs and monkeys, but they nearly all retain a house in the village as well, and if they have more than one wife, one will live in the village and the other in the house in the fields.

The traditional Sambaa houses are small round huts completely covered down to the ground with grass thatching as a protection from cold winds. There are still many of these built, but with the coming of the European and the Mission influence the tendency is more and more to build larger square or oblong houses divided into several rooms. Quite a number of two-storied houses have been built, particularly at Mlalo and Bumbuli where the Bethel Mission has been long established. Some of the native-built houses in these places are really attractive, with their whitewashed walls and skirting of red ochre and their little gardens in front.

The houses in villages are generally clustered close together, and the village is surrounded by small tobacco fields—each man having perhaps a quarter or half an acre of tobacco. Any manuring that is done is done on these fields which are conveniently near the houses and cattle bomas. A man's other shambas are scattered about the countryside, and he may have several hours' walk to reach one of his fields (see map III). This point should be remembered in deciding what acreage a man can cultivate, since a lot of his time is taken going to and from his work, and this is not always reckoned with.

With regard to the number and size of fields cultivated by any one man, the only figures that the writer can personally vouch for as reliable were those

obtained during a survey of Vugiri. These figures will necessarily vary from place to place, and in the writer's opinion the only method of obtaining a really accurate average figure would be for detailed surveys to be done in various localities, and these figures compared and an average reached. The figures for Vugiri are as follows:—

NAME	FAMILY				SHAMBAS		Acres per Unit
	W	C	Units	Plots	Acres	Cultivated	
Mdoe Bandera ...	2	—	3	3	15.95	12.30	4.10
Mgoda ...	1	1	2½	1	8.80	8.00	3.20
Juma ...	2	2	4	3	10.35	7.65	1.91
Ramadhani ...	2	—	3	3	5.60	5.35	1.79
Msagati ...	2	—	3	3	5.55	4.15	1.39
Ramadhani s/o Mdoe ...	2	—	3	2	4.90	3.90	1.30
Ibrahim ...	3	1	4½	2	6.95	5.45	1.21
Francis ...	3	2	5	1	6.85	6.00	1.20
Christopher ...	1	—	2	2	2.00	2.00	1.00
Adriano ...	1	—	2	2	1.28	1.05	0.52
Michael ...	1	—	2	2	0.95	0.90	0.45
	20	6		24	69.18	56.75	

W = Wives.

C = Children of an age to work in the fields but not old enough to have fields of their own.

Units are computed as 1 for each adult and $\frac{1}{2}$ for each working child.

Average acres in tenure per family ... 6.28

Average acres cultivated per family ... 5.16

Average percentage of land cultivated ... 82%

Average acres per unit ... 1.67

Mdoe Bandera is the most important person in the sub-chieftdom next to the sub-chief himself, and it is fair to assume that he gets some outside assistance with his work. Mgoda, however, has only his family to help him, so that probably eight acres would not be too much for any average hard working family, provided the shambas were close together and not too far from the owner's house. Mgoda has only one shamba and that is close to his house. Where a man has to walk a long way to his different shambas it should still be possible for him and his family to cultivate at least seven acres. There can be no doubt that the Wasambaa as a whole have no idea of the meaning of hard work, and a great many of them could cultivate double the acreage they do at present. Perhaps, however, it is as well that they do not cultivate up to their full capacity, as the land shortage would rapidly become acute.

It has already been explained that there are three planting seasons—"Mwaka," "Mulwati" and "Vuli"—varying according to locality and altitude. In addition there is the *Kilimo cha mazi*, or cultivation by irrigation which takes place in August. Owing to the steepness of the hillsides irrigation is

comparatively easy and water is led on to the crops by furrows from rivers or puddled mud dams, if spring water is not sufficient to ensure a permanent flow. All kinds of crops, permanent and otherwise, are planted in the *Kilimo cha mazi*. Kitivo crops are also planted in August by draining swampy land in the valleys. This type of cultivation is reserved for food crops of a temporary nature and permanent crops are not planted, since the land is apt to get badly flooded in time of heavy rain.

The Wasambaa have long since given up methods of shifting cultivation. Because most of them do not like to go down to the plains and because of the large areas of forest reserve and alienated land their movements are necessarily restricted. There is still a certain amount of movement of families from one part of Usambara to another, but this does not usually entail the ploughing up of virgin land. Any land that is not under a standing crop is used for grazing land, and when a crop has been harvested the shamba is thrown open to stock.

There is no recognized system of crop rotation except the fallow, although a man very often plants leguminous crops and roots such as cassava with his corn. When the corn is harvested the cassava is left, and corn is not planted the following year in the same shamba. Fields are often left fallow for as long as four years in order to get them back into good heart, but since no attempt is made to clear the weeds and no manuring is done and they are allowed to become overgrown, the results cannot be so beneficial as the long disuse of the land would warrant.

When clearing a field for planting a crop it is usual for a man to get his friends to help him with the heavy work, when he will reward them with beer and meat and will of course assist them in a similar way in return. After the heavy work has been done the fields are usually divided up, and each member of the family receives his or her portion to keep clean and to cultivate. It is the duty of the men to keep away pigs and monkeys during the night and the women and children do it during the day. The period when these marauders are most dangerous to the maize crop is about six weeks after planting, and for a whole month a constant watch has to be kept day and night. The time spent on this necessary duty must also tend to reduce the acreage that a man and his family can comfortably cultivate.

At harvest time friends are again invited in to assist—this time both men and women. It is the duty of the women to break off the corn cobs and collect them together. The men then remove the leaves, after which the women carry the cobs into the house. Beer is provided and goats are killed as a reward for the helpers.

Women have no particular rights with regard to the money received for a crop which is sold. In most cases they receive a fair proportion of money according to the work they have done on the crop, but it is considered that as the man feeds the woman while she is working it is only fair that he should get the largest share of the money, even if his wife has done most of the work.

VI.—LAND TENURE

A.—ARABLE

There are three distinct forms of arable land tenure in Usambara. The writer has formed an opinion as to how these three forms came into existence, but since the people themselves are very vague about this, it must be regarded as merely a theory.

It appears that in the beginning all the land was the property of the tribe, and was vested in the elders who gave it out and confiscated it as they saw fit. A man was allowed to occupy a field that he had cleared and cultivated himself, but he could not regard this field as his own property, nor could he occupy it if the elders decreed otherwise. The first form of land tenure with which I propose to deal is very like this original form, and although it may be a misleading term, I have called it "Tribal Tenure" for want of a better name. The people themselves have no names for these forms of tenure, and indeed do not clearly differentiate one from the other in their own minds. A man holding a shamba under this tribal tenure has no rights in the land itself, but if there is no very strong reason for his fields being taken from him he and his family may occupy them for generations without being disturbed.

This appears to be the obvious explanation for the evolution of the second form of land tenure which I propose to call "Family Tenure." After a shamba had been handed from father to son for many generations it came to be regarded as the property of that family rather than as the property of the elders and the tribe, and the family collectively claimed what nearly approximates to freehold rights in the land. This theory as to evolution is merely supposition, as the people have no idea how or when this form of tenure started. Apart from the fact that the tenure is collective within the family rather than individual there is no doubt that the family has very much more than a right of occupancy, and has rights in the land itself to dispose of by sale or in any other way, or to use as they wish. This is very different from tribal tenure and leads on naturally to the third form of tenure which I have called "Individual Tenure."

Individual tenure gives the individual—as opposed to the family—sole rights in the land itself to dispose of or use as he wishes. A man only holds a shamba under this form of tenure if he has bought it himself, since if his father has bought it and there are other children, it once more reverts to family tenure and is not an individual holding when the children inherit. This is because the laws of inheritance make it necessary for the land to be divided among the children, and it cannot be willed to any one child.

There have been several theories propounded as to how the buying and selling of land first arose, giving the individual complete rights in the land. It has been suggested that with the coming of the European and the consequent influences together with the increased growth of permanent crops such as coffee, the practice first came into being. The people have always been in the

habit of selling standing crops on their land, and of course in the case of fruit trees, coffee, etc., this becomes equivalent to selling the land itself.

The writer, however, is not satisfied that this is the reason for the beginning of the practice. The natives say that the custom started long before the Europeans came to Usambara. It appears more likely that shambas were first sold in secret without the knowledge of the chief and elders, and that when the transaction was discovered it was difficult to do anything but leave the buyer in possession if the original owner had gone away and was unable to return the money paid. According to native logic anything that has been bought may be sold by the buyer, so there was then no way of preventing the buyer from selling again if he wished.

The chiefs and elders are strongly opposed to the custom of buying and selling shambas, and do all they can to put obstacles in the way of it. They say that if it were not a very old custom they would refuse to allow it to continue, but since they have no idea when it was started, and it had become a custom long before they were born, they have no option but to sanction it.

The sub-chief of Vugiri stoutly denied that such a custom existed at all, and repeatedly asserted that land was never and never could be sold. The reason for this was that some years ago quite a number of shambas in his sub-chieftdom had been sold to alien natives—recruited labour from sisal estates—who apparently were not really intending to settle, but only to make what money they could from the land and then sell it again. This was strongly resented by most of the local inhabitants and particularly by the elders and sub-chiefs who did not like to see their precious land misused by aliens.

This selling of land to irresponsible people outside the tribe is what the chiefs and elders so much object to, but in a long discussion with the chief and two sub-chiefs and various elders it was agreed that the sub-chief of Vugiri was merely bluffing when he said his land could not be bought and sold, and that if it came to the test he would be compelled to allow it. The sub-chiefs and elders do all in their power to discourage the sale of land to alien natives, and indeed say they have made a rule that no alien native may plant permanent crops on land which he has bought. This appears to be extremely illogical and probably would not be upheld if put to the test. The fact remains that, in spite of all the efforts of the authorities, land is bought and sold in large quantities both to inhabitants of the country and to alien natives.

It is regretted that there is no shamba held under individual tenure included in map IV. Although two such shambas were surveyed they were too far away to be included in the map, and it is scarcely surprising that there are none near this sub-chief's headquarters, since he is more strongly opposed to this form of tenure than any of the other sub-chiefs.

1. Tribal Tenure.

A man or woman, native or stranger, who wishes to acquire a right of occupancy on land in a certain area must go to the elders of that area. If the elders and sub-chief think he is a suitable person they will then allot him

a piece of land which may or may not have crops of any kind or trees growing on it. In every sub-chieftdom there is a certain amount of land which is held by the sub-chief and elders, apart from their own private shambas, for the purpose of being allotted in this way. This land is given out free, even if there are crops on it, and no rent or tribute of any kind is exacted for its use, although it is customary to give a present (usually a goat) to the elders for the trouble taken in allotting and deciding the boundaries of a shamba or shambas.

A man may, and probably will, occupy the land for the rest of his life, and his children after him. The arrangement, however, is terminable by the sub-chief and elders for any reason which seems adequate to them, as long as they give the occupant of the land time to harvest his temporary crops before leaving. Sugar cane is regarded as a temporary crop, and a man who is asked to leave his shamba has the right to come back and cut his sugar cane until it is finished. It must be emphasized that the sub-chief and elders very rarely use their right to turn people off the shambas they have given to them, but the right exists, and the result is that people occupying such land tend to grow exclusively temporary crops, since if they are turned out they will get no reward or compensation for permanent crops or improvements of any kind.

A shamba acquired in this way by a man's father may also be inherited by him, subject to the rules of inheritance described under family tenure, but this still merely gives the inheritor a right of occupancy and not a right of ownership. The elders have the right to remove him from his shamba, giving him time only to harvest his temporary crops.

The occupant may plant any crops that he wishes on his shamba. He may sell all temporary crops, including sugar cane, but he may not sell permanent crops—banana trees, fruit trees, coffee, etc.—even if he has planted them himself. He may cut down for his own use any trees that are growing on the land, but he may not sell the wood nor profit from it in any way. This at first may seem rather illogical, but the fundamental idea underlying all these rules is that a man may not profit from anything for which he has not paid. This rule about the cutting down of trees is now subject to the Forest Ordinance and various orders of the Shebuge under the Native Authority Ordinance which forbid the felling of certain trees and trees growing on steep slopes, banks of streams, etc. Questions as to whether it would not be wiser for the sub-chief and elders to restrict a man's right to cut down trees on land virtually belonging to the tribe, and so reducing the value of the land, are merely greeted with astonishment. The people say that no one would be so stupid as to cut down either fruit trees or useful shade trees, and why should he not cut down useless trees if he wanted the wood? It is thought that the Wasambaa will shortly place more value on trees, since many of them are planting wattle trees and others for building and firewood and may later be persuaded that they are also valuable for the sake of the land.

There is no obligation for a man to cultivate his land, nor indeed to effect any improvements whatsoever on it. If, however, he has left his shamba

uncultivated for many years and someone else wants it, the sub-chief and elders would be more likely to give it to the next applicant than if it was in cultivation at the time.

The occupier has the right to dig for earth for building on his own land and also, in places where it is found, for red ochre. The latter is sold to the Masai for personal adornment and high prices are obtained for it.

A shamba occupied under tribal tenure may be lent, exchanged or even given away, but the next occupier is subject to all the same conditions as his predecessor. The land itself may not be sold by the occupier, as is indicated by the restriction on the selling of permanent crops. A man's children may, and usually do, inherit his shamba, but as previously explained, this is subject to the approval of the sub-chief and elders, and the tenure may be terminated at the end of any crop season.

When a chief, sub-chief or elder is appointed to office he automatically takes over certain shambas on which he has a right of occupancy by virtue of his office. These shambas may only be occupied by him as long as he remains in office and will go to the next holder of his post on his retirement or death. He has no right to pass them on to his children unless it happens that one of them takes his post after him. He may sell temporary but not permanent crops, and he may not sell the land itself.

2. Family Tenure.

A man whose father owns land under this system of tenure may inherit that land. This naturally applies only to inhabitants of Usambara and not to strangers. The sub-chief and elders, unless expressly called in to settle any dispute, have no right to interfere with the laws of inheritance, even should they disapprove of the heir.

If a man has several sons and daughters his land is usually taken over by the eldest son, who makes a fair division of it among the other children. It is not, however, necessarily the eldest son who does the apportioning, since if a man thinks one of his sons is more capable than the others, he may appoint him to be the executor of his affairs. Whether he is the eldest son or not, he must make a fair division of the land among the other children, or the sub-chief and elders may be called in to redivide the land as they think reasonable.

It might be thought that under this system of inheritance fragmentation of land would rapidly take place, but in actual practice where a man's fields are not sufficient to be divided among all his children so as to give each enough to live on, as many as possible will be provided for and the others will have to acquire land either by obtaining it from the sub-chief and elders, by buying it or by borrowing from a friend. Shambas are not divided up into uneconomically small portions in order that each member of the family may have his share of the land. In a case where only some of the children are able to inherit, they must provide for the others from their shambas until they are in a position to provide for themselves.

Daughters may inherit land as well as sons, but they will usually get a much smaller portion. When a woman has inherited land from her father and afterwards marries and leaves the area where her shamba is situated, the land will revert to one of her brothers (probably the eldest) and she will not normally have any further claims on it. If, on the other hand, she remains in the locality of her shamba, she retains the land and her children will inherit it. Should she die without issue, the land will go, not to her husband, but to her brothers. If a man dies without children his wife may not inherit his land; it will go to one of his brothers, and normally the wife will be taken over by a brother as well and so provided for. Should the children, at the time of their father's death, be too small to manage their own shambas, the wife and children and shambas will be taken over by a brother who will return the land to the children when they are old enough to cultivate it. When a man dies his wife and children will usually be taken over by the eldest brother of the husband, but the wife has the right to choose which brother she prefers and will then be taken over by him.

In the case of a man who has wives and children in different parts of Usambara, the children will generally inherit the fields on which their mother lives and works. Should a man die with no issue and no relations, his fields will go to the sub-chief and elders, and in due course be redistributed to someone wishing to acquire land from them. This is a very rare occurrence since "family" is an elastic term, and there is almost always somebody who will claim a right to ownership of the land.

It is customary for a man inheriting land to make a present of a small shamba to the elders. This is not considered necessary if the land is obviously only enough for himself, and he may make a present of a goat instead.

Any one inheriting land held under family tenure is a permanent owner of that land. His ownership may only be terminated by his own wish, and no one has the right to remove him. With regard to this, the sub-chief and elders claim a power, which is very rarely used, of ordering an undesirable person to leave their area. Should this person be in possession of land belonging to his family that land will be handed over to other members of the family. This, however, does not constitute a break in the permanence of the tenure, since the land remains in the hands of the family, and if the man, for any reason, is allowed to return to the *Zumbeate* he can claim his land back again. It is doubtful to what extent such expulsion of undesirables would be upheld by British courts.

Similarly, if a man leaves a certain district, his land automatically goes to other members of his family; but if he or his children return again they may claim that land back. If a whole family is leaving a locality, they may either sell their land—in which case, of course, they have no further rights in it—or the land will be handed over to the sub-chief and elders. In the latter case, should any member of the family return, even a generation later, they may claim the land, whether it has gone completely back to bush or has been given

out to somebody else by the sub-chief and elders. If it has been given to somebody else, the occupant will only be allowed time to harvest his temporary crops before removing.

Although inherited shambas are said to be owned and are worked by individuals within the family, no important step may be taken with regard to them without the approval of the whole family. The native court books are full of cases of individuals selling family shambas without first obtaining the consent of the family. With the permission of the family a man may plant what crops he wishes, and may sell temporary or permanent standing crops, or the land itself. Temporary crops may be sold without the family's permission, but permanent crops or the land itself may only be sold with their approval. Any trees on the shamba may be cut down and the wood sold without reference to any one.

There is no necessity for a man to cultivate his shamba, and he may leave it for as much as a generation and his children come back and claim it again. He may also lend or exchange it if he wishes, as he will then be able to claim it back at any time, only giving the borrower time to harvest his temporary crops.

The land must be inherited by the children and no one has the right to will it to a single child, or to any one outside the family.

There is a certain incentive towards improving the land in this form of tenure since, even if he does not wish to sell the land, the occupier will wish to hand on a good heritage to his children, and for this reason will endeavour to keep the land in good heart.

3. Individual Tenure.

An inhabitant of Usambara or a stranger, male or female, may acquire land by buying it without reference to the sub-chief and elders, although the latter will usually be informed of the transaction in order to save troubles and misconceptions later. The price of a shamba varies from a shirt to as much as four hundred shillings according to size (anything from one-quarter of an acre upwards), locality, abundance of water, crops grown on it, etc. In the case of land with fruit trees or other permanent crops growing, the price will naturally be the greatest. Land with no crops whatever growing on it may be sold, but this will fetch a very small price and will probably not be bought at all unless it is in a locality particularly desired by the buyer. In most cases the buyer and seller fix the price simply by bargaining, but where they fail to come to an agreement, the elders may be called in to help to settle the dispute.

Land acquired free from the sub-chief and elders may not be sold, but family land may be sold with the consent of the whole family. An individual who has bought land may sell it without reference to any one.

The duration of tenure of shambas owned by the individual is permanent, being only terminable by the owner himself, or his descendants who have inherited the land. In this case also the sub-chief and elders claim the rarely

used and rather questionable right to remove an undesirable from their *Zumbeate*. The man they wish to remove, however, will hand his land to his children, if any; if he has no children he has the right to sell his land, and if no one else will buy it the sub-chief and elders must do so.

Individual rights of tenure only apply to a man who has bought land himself. When that land is inherited by his children it automatically reverts to family tenure, that is, the children all have rights in it; it may not be disposed of without the consent of all the children, even if only one of them is actually in occupation of the land.

The rights and restrictions connected with this form of tenure are in every way the same as those of family tenure, with the important difference that in this case the individual may act on his own initiative without reference to any one. The only apparent difference between individual tenure and the European definition of freehold ownership is that, though he may sell, an individual Msambaa owner may not will his land either to a single child or to any one outside the family. It must be divided fairly between the members of the family, and should it only be sufficient for one child, the other children must be consulted about all important transactions concerning it, and, in fact, it becomes once more a form of family tenure. Except that the individual may sell his shamba during his lifetime, this custom appears to bear some similarity to the old British laws of Entailed Interests.

As well as being held under these three forms of tenure, shambas may be borrowed. This is not a question of lease; the shambas are lent freely and there is no rent to be paid. The borrower may grow what crops he wishes, and may sell temporary crops. He is liable to be turned off at the end of any crop season, and he has no right to sell permanent crops nor, of course, the land itself. The borrowing of shambas is a very common practice since it is often convenient for a man with small children to have his land cultivated by a friend until such time as his children are able to do it themselves. The borrower has the right to any profit from temporary crops that he plants, so the transaction is a very fair one.

Another common practice is that of selling standing temporary crops. When a man has planted his crop and has to go away, or for some other reason is unable to cultivate it, he can sell the crop as it stands. The buyer has then the right to enter the shamba for the purposes of cultivating and harvesting the crop, and he may sell the product of the harvest if he wishes. As soon as the crop is off the ground the buyer ceases to have any rights whatever in the land.

B.—GRAZING

The Wasambaa, although most of those who live in the mountains are cattle keepers, have no idea of any connection between the two forms of farming and in consequence the rules of land tenure for arable and grazing land are completely different. Cattle are not kept for eating, and although milk is drunk in most parts of Usambara, the primary purpose of keeping

cattle is as a bank for wealth. Any man who has forty shillings and nothing immediate on which to spend it will buy himself a cow which he will only sell again if he is in dire need of money. The same, in a lesser degree applies to goats and sheep, although these—particularly goats—are killed and eaten on feast days and any particular occasions.

All grazing land is communal to the tribe, and there is no such thing as individual ownership or rights of occupancy on grazing land. Any land that is not actually under a standing crop may be used for grazing, and when a crop has been harvested the shamba is thrown open for stock. It appears never to have occurred that the owner of a shamba has objected to cattle grazing on his land after his crop has been harvested. Since the crop has gone it will help to keep the bush down and will benefit the land. For this reason no question of individual rights seems to arise, even with grazing on individually owned shambas.

Grazing land has no clearly defined boundaries between village and village, and even on occasion between sub-chiefdom and sub-chiefdom. The people of Mlola actually graze their cattle over the border of the Mlalo sub-chiefdom. The usual procedure is for each small community to make an agreement with its neighbour as to how far they shall graze.

The same authority of the sub-chief and elders settles all disputes about grazing land, but in the main it is not referred to, each village making its own arrangements.

In some parts, such as the Mtae sub-chiefdom, the people have divided out the wet weather upland grazing and the dry weather swamp grazing. There appears, however, to be no compulsion about where the cattle graze, and it is no punishable offence to go beyond the dividing line in the wrong season. Usually no such division is made and the cattle continue to graze in one place until the fodder is exhausted before moving on.

In the Mlalo and Mlola areas grazing is scarce, but the authority has no right to restrict the number of cattle owned by the people nor to prevent them from completely denuding the pastures of grass in the dry weather.

A man wishing to make an arable shamba or to build a house on land which is recognized grazing land must first go to the sub-chief and elders, who may refuse him permission to do so on the grounds that the land is needed for stock.

The usual method of herding stock is for any number up to about ten people to herd their stock together, and each one takes it in turn to be responsible for the herding for three or four days at a time. The herdsmen (the actual herding is generally done by his child) is then responsible for any damage done by the cattle in arable land and must pay the fine himself, no matter to whom the cattle belong.

A man owning several cattle will not keep them all himself, but will send them—generally one at a time—to various friends in distant parts of the country. He does the same with his sheep and goats, and even with hens and

dogs. The system of payment to the friend for keeping the animals is somewhat complicated and varies slightly from place to place. If the animal is a male the herdsman receives no payment at all, but normally a female is sent as well so that he will get some compensation for his trouble. In the case of cattle the herdsman gets the milk from the cow, which is considered ample payment. Any calves that are born belong to the owner of the cow and not to the herdsman. For looking after sheep and goats the herdsman gets the third lamb or kid that is born, the first two going to the owner of the beast. Because of this some of the poorer people are only too willing to take sheep or goats and keep them for others, as in this way they are able to start up a herd of their own without having to pay out any money. If a hen hatches out six chickens the owner claims three and the herdsman gets the other three; if a bitch has a litter, the herd gets one puppy.

The herd has no right to kill or eat any of the animals committed to his charge in this way, and must pay compensation if he does so. If, however, an animal dies by accident or from natural causes, the herd is not considered responsible, and although the carcass is, if possible, returned to the owner, the herd generally receives a leg in payment for his services.

By dividing up his animals in this way a man is in less danger of losing them all at once from infectious or contagious diseases. As has been already stated, a man's herd is his wealth and if he loses all his stock in one disease epidemic he is in a very bad way.

The result is that it is very difficult, even for the natives themselves, to estimate each other's exact wealth, since it is unlikely that a man will send all his stock to one friend, but will divide them up among several, none knowing how many another has. It has been suggested that a good way of estimating the wealth of each man for tax purposes would be to count the cattle in his possession. It may be seen that this would in practice be a matter of some difficulty, since the cattle kept by any one man are probably not his own, but may belong to two or three different people in widely varying localities.

C.—BUILDINGS

It should be realized that almost all the native-built houses in Usambara are of a temporary nature, and are not intended to last for more than a few years. For this reason they are not regarded as very important in the system of land tenure.

Houses built in villages may not be built until the site is first approved by the sub-chief and elders. The house then belongs to the builder, but the land on which it is built is not his property. If the house falls down, the builder or any one else wishing to build in the same place must first apply to the sub-chief and elders for permission. The houses may be inherited, but the land on which they are built always remains the property of the tribe. They may also be sold, with the same proviso that the land itself is not sold with them. There is one man at Vuga who makes a practice of building houses in order simply to sell them to others.

If a man wishes to build a house on his own shamba, of course the house and the land belong to him and he need ask permission from no one, nor may he be forced to move his house unless it is built on land obtained from the sub-chief and elders, that is, held under tribal tenure.

Any man building without permission on land other than his own shamba—for instance, recognized grazing land—may be turned off without warning by the sub-chief and elders, and forced to move his house to another place.

If for some reason the sub-chief and elders consider it advisable that a house or even a whole village should be moved from a certain locality, they have the right to order their removal, even if they have previously given permission for them to be built in that place.

The building of churches, mosques and schools is subject to the same conditions. Permission must first be obtained from the sub-chief and elders for a piece of land to build on, and that land remains the property of the tribe as represented by them. In the sub-chieftom of Bungu, a retiring sub-chief wished to give his stone-built house to the Bethel Mission for a native school. This project was considered and refused by the elders on the grounds that the mission might regard the land on which the house was built as their own, which was contrary to native law and custom.

Building materials, earth, poles and grass, are free to every one as long as they are not cut or dug from somebody else's shamba. In the latter case permission must first be obtained from the owner or occupier of the shamba. The cutting of trees for building is, of course, subject to Government and Native Authority Rules. Red ochre, which is sold to the Masai and used for decorating houses, may also be dug by any one without permission provided it is not in any shamba.

D.—WATER RIGHTS

The water in rivers, lakes and natural water holes is regarded as communal to all, no matter where it may be situated. If a man has any natural source of water in his shamba he must allow any one to use it.

In the case where a man has dug a well or built a dam for himself there is a certain divergence of opinion. After long discussions, the chief and his elders came to the conclusion that no man had any right to refuse others access to his water even if it was a well dug by himself. The fact remains that certain people who have dug wells for themselves do regard them as their own property and, whether rightly or wrongly, refuse the use of them to others.

Any man who uses water in another man's shamba is liable to a fine if he or his cattle do any damage to crops while going to or from the water. The fouling of springs for drinking water, either by cattle or any other means, is also a punishable offence.

Water furrows for irrigation purposes are generally dug by agreement between several people whose shambas will benefit by them. No one but those who have actually helped to dig the furrows have any right to use the water for any purpose. It has been known for the sub-chief and elders to order

furrows to be dug, but the usual procedure is for five or six people to agree together. If any one of these people refuses to do his fair share of the digging, he will either not be allowed to use the water, or he will have a chicken taken from him to compensate those who have had to do an extra share of digging. When the furrow is dug the shamba owners decide among themselves who shall have the water and on which days. There appear to be surprisingly few disputes arising from this water question, but in the case of very long water furrows the elders generally put in a reliable man to supervise and see that every one gets their fair share of water and that none is being wasted in the bush. All repairs and redigging of furrows is done communally by the users of the furrow, unless the damage is known to have been done by one particular person when he must either pay compensation or repair the damage himself.

E.—MISCELLANEOUS

1. *Trespass.*

There is no law of trespass as we know it among the Wasambaa. There is nothing to prevent any man from walking, or even driving cattle, through another man's shamba, provided that he does no damage to crops. No one would dream of wishing to order a stranger off his land if he were doing no harm. If a man or his cattle do damage another man's crops, the case may be taken to court and a fine imposed on the trespasser. This fine will be for the damage done and not for the actual act of trespass.

2. *Rights of Way.*

Where a recognized path runs through a man's shamba he has no right to dig it up or sow a crop over it, unless he has first made another path equally convenient and direct for the people to use. If the path is a recognized cattle track and runs right through the middle of his shamba the occupier of the shamba must build a hedge on either side of the track to prevent the cattle from damaging his crops. If he does not build this hedge he cannot claim damages against the herdsmen of cattle which wander into his shamba. If, on the other hand, there is no recognized track through his shamba and cattle are allowed to stray in and do damage, he may claim compensation.

3. *Graves and Burial Grounds.*

A pagan native is generally buried on his own shamba, and his sons in the same place. The land used for burial may not be dug up for crops, nor may it be sold, even if the occupier of the shamba is the absolute owner of the land. No one may knowingly walk over a grave. In many cases of old graves the actual place of burial is not known, but it is not a sin to plough up or sell a piece of land with a grave in it if it is done unwittingly.

Graveyards for Mohammedans are given out by the sub-chief and elders and the land may never afterwards be used for any other purpose than burial.

The burial ground of the chiefs at Vuga may only be entered by the chief himself and his seven elders. It is a deadly sin for any other person knowingly to enter it.

4. Salt.

There are no salt deposits used in the highlands of Usambara. All salt is obtained from Mombo, Mazinde and Kalamba (Upare) deposits where the villagers prepare the salt by filtering water through the salt-laden earth in pots and boiling the salt. Some Wasambaa from the villages to the north of the highlands on the Umba steppe go to Kalamba to prepare salt. For the rest it is either bought by natives going to the spot or peddled by itinerant traders.

VII.—CONCLUSION

It is not easy to speak with certainty, yet one has the impression that the evolution from tribal tenure to family tenure, and again from family tenure to individual tenure is slowly but steadily going on. In parts of Mlalo and Vuga and in the whole of Gare sub-chieftdom there is now no tribal arable land available. The tendency is for more pieces of land to be claimed as their own by families; European influence, and the breaking up of families under modern conditions encourages and provides a sympathetic background for the development of individual tenure, the whole process being motivated by the restricted area in which the Wasambaa live.

The only check to the latter form of tenure are the inheritance laws, which still decree that a man's land shall be divided among his children. The will, however, is becoming, again through European influence, an idea more familiar to the native mind. Depositors to Government funds, such as provident funds, are required to mention the name of their next-of-kin to whom their deposits should go in the event of their death. Larger native estates are administered under British law. Thus the native mind is becoming familiarized with European ideas of willing property to individuals, rather than to families. Eventually these influences may enter also into the sphere of land, and a man may learn to desire to bequeath his land to a specific individual as well as his property. When that happens, the last barrier against the development of individual tenure in the Usambaras will be broken down. The individualization of land process will be accelerated.

The evolution of tenure, then, in this tribe is, in course of time, if not artificially hindered, going to lead to individualization.

The tribal elders do not like this process; on the other hand they admit their powerlessness to stop it. Their law recognizes it, and it is too late to alter their law now. They do not fully realize, of course, where the process will end.

We have to consider whether from the point of view of Government this evolution is going to prove satisfactory, for it is obviously improbable that Government would artificially interfere with a natural growth.

The question of the benefits of individual tenure *versus* the benefits of communal tenure and their relative possibilities from the point of view of improving native farming is a vexed question about which much has been written. One school of thought demands that Government should encourage

individualization by all means in their power, on the grounds that until a man owns land he will never fully develop it. The other, fearful lest Africa should be hurriedly made property-minded at a time when the evils of individual ownership are being roundly attacked by new born socialistic thought the world over, sees in communal ownership a way to spare Africa the troubles that beset Europe, and maintains that the native can be taught to develop his land through his indigenous communalism.

This is not the place in which to enter on a discussion of this problem. It may well be that the latter view is the right one when applied to the majority of African tribes, in whose land tenure laws the process of individualization has not entered. It is suggested, however, that where a process of individualization has begun, and can hardly be arrested, the authorities should base their policy on an endeavour to encourage the process, and finally to use the result to teach all the benefits that can be derived from individual ownership. If checks are provided to avoid the amassing of land by single persons, and speculating in land, there is no reason to suppose that the system which has proved successful in many lands may not prove the best solution also for parts of Africa.

At the moment, it has to be admitted, those benefits which are usually supposed to accrue from individual ownership, are not always obtained. A man who buys a shamba may neglect it, or ill-use it in the knowledge that he can, in a crowded country, easily sell it again. This result, however, may be regarded as a temporary phenomenon, for as the process of evolution goes on land must inevitably be regarded as more and more valuable. Further, a more real appreciation of values according to the development and actual worth of the land is bound to be in greater measure understood as time goes on. A shamba containing a good crop naturally fetches a better price than that containing a bad one, and it is only a step further to the realization that careful management of land, manuring, contour hedging, etc., will ensure a better price when selling. In any case this temporary evil is more than offset by the additional interest taken in much land that is individually owned.

The population of Usambara is steadily increasing so far as, in the absence of accurate figures, can be judged, and a land shortage—already existent in the Mlalo *Zumbeate*—envisaged in the near future in a number of areas. The degree of shortage is hard to estimate, and depends on what is meant by the term. For some generations land has been too precious for shifting cultivation. It is estimated that, if the present standard of agriculture is maintained, and the present rate of increase in human and cattle population, there will be an appreciable shortage in a number of areas in a few years. The native authorities are fully aware of this, and considerably concerned.

There are only two solutions. The first is that the overflow of population should go down to the plains that surround the block of hill country. This, though with Government encouragement many do go down for short periods to cultivate rice and cotton shambas, as a whole the Wasambaa hate to do.

The hills are their traditional home, the plains are a foreign and unfriendly land. Only the dire pressure of circumstances will bring them to it. The other solution is more intensive farming in the hills, and this solution, it is probably safe to predict, will be sought first. Sooner or later the Wasambaa will be forced to learn the rudiments of farming. When they do so, the process of individualization will again be accelerated. It may, in fact, be hoped that the process of individualization and the process of learning more intensive methods of farming may go hand in hand.

We must now turn to the question of grazing land, which raises a number of more acute and more urgent problems. Grazing land is communal, and so far as can be seen, will for a long time to come remain so. The elders are endeavouring to prevent arable from encroaching on grazing land, but there is, for all that, a tendency for grazing land to be converted to arable. Increased planting campaigns, sponsored by Government, accelerate this tendency. The enforcement of contour hedging has further diminished grazing land, for cattle grazing on the fallow between the hedges destroy the hedges and bring on the owners' heads the penalties of the law. Grazing land then tends to diminish in area.

At the same time cattle are steadily on the increase. The profits obtained from selling surplus foodstuffs and economic crops are put into cattle. The Wasambaa, living in a kind country which has not known a serious famine since the last century, are becoming well-to-do, and prefer the visible profits of the cow to the doubtful mysteries of the savings bank. On the whole the cow gives a higher rate of interest. The good services of the Veterinary Department have increased the chances of survival and the cattle are steadily increasing in numbers.

The inevitable result is that the grazing land is becoming more and more heavily grazed; it is getting less and less chance to rest, and whole hillsides become freshly eroded and reduce the already diminishing pastures. Government rules concerning contour hedges do not apply to grazing land; the Forest Department does valiant work, but destruction outspeeds reclamation.

Various remedial measures have been suggested.

The first is the communal cutting of bracken and bush, with a view to increasing the amount of grazing land available. This is undoubtedly possible, but it can only be a palliative. The area is still limited. And cattle, with more green pastures at their disposal, will procreate with increased zeal.

The second is the encouragement of rotational grazing, already adopted in Mtae, an arrangement whereby the cattle graze the hills during the rains and the valleys during the dry season. This also may only be something of a palliative, for the ever increasing number of cattle can still do damage. It is, however, suggested that the principle is sound and may do something to arrest the damage to the hillsides. Whatever the number of the cattle they will do less harm to the hills in the rains than in the dry season. It should in all fairness be mentioned that the Veterinary Department are doubtful as

to the benefits of valley grazing, owing to the presence of liver fluke in the marshy valleys. This parasite accounts for a considerable number of cattle, though many survive. Perhaps it is best for once to let nature have its way and the liver fluke take its toll—for it is not a serious one.

Both these remedial measures, if only palliatives—and it is suggested that the second is more than a palliative—may give us time to institute the third suggested method.

This, the third suggestion, is that the number of cattle should be reduced by gradually inducing the native to realize the true value of his cattle. No one supposes that it is easy, but it would present the only final and satisfactory solution. Whether we consider the cow to be a curse or the wealth of Africa, it seems probable that the beast will always be with us. It is then preferable to make the best of it. Various ways have been suggested of setting about it, none of which can be successful alone, but all of which together over a period of time may have some result.

Cattle markets have already been tried in the hills with a view to encouraging the sale of cattle. They have not proved successful. The hill dwellers are used to obtaining a high price in their local transactions between each other; the traders from below cannot offer such prices. It is cheaper to drive cattle, even with attendant losses, over the dusty trail from Dodoma and Singida.

The introduction of hide and ghee industries are both desirable. They help to bring realization that a dead cow has some value and a live one can bring profit.

It is doubtful whether the time is yet ripe for the native courts to encourage the payment of bride prices and other customary payments in connection with marriage in cash instead of in cattle. It should be noted, however, that the fine for adultery is now imposed in cash. Is it a possible step for other customary payments to be required in cash, or for the co-operation of the native authorities to be enlisted in encouraging the bride price to become a cash payment? The Wasambaa have lived in proximity to Europeans for a generation and are not unacquainted with the use of money. When that step is taken, the position of cattle in the bank balance sheet will be severely shaken.

Finally, there is education—school education and propaganda in its best sense. The aim must be to show the native the connection hitherto unrealized by him between arable and cattle farming. The Wachagga already practise stall feeding on a large scale, and there appears to be no reason why the Wasambaa should not imitate them in time. Both this and the carting of manure onto their fields is a difficult problem because of the distances of the shambas from the houses. But the Veterinary Department has already started a demonstration of donkey pack transport, and this appears to be the ideal solution. The process of propaganda and education is slow and discouraging. Further, the European is perpetually at a disadvantage, for he has to give a reason for his exhortations. That reason is almost invariably—profit, the

personal profit of the man who follows out the exhortations. The native is still primitive enough to despise exhortations which are based on degraded motives—personal profit is obviously such a one. Difficult as it is, European propaganda must emphasize at all costs the good of all and not individual profit. While it may be hoped that something better will be built from individualization of holdings, yet propaganda must avoid mention of profit for the individual.

The teaching of the connection between arable and stock farming, though the task is formidable enough, may prove easier here than among tribes where the communal is exclusively emphasized. We have envisaged the natural development of an individual tenure, population pressure providing the stimulus to better farming. Here is good ground on which to sow the seeds of exhortation. The cattle population pressure provides a further stimulus. These forces combined and guided may produce something better in the agriculture of the Wasambaa, something more worthy of the generous gift of the healthy, well-watered country that providence has bestowed on them.

An Island in Lake Victoria

By H. F. I. Elliott

GENERAL

THE islet of Kaserazi lies two miles off the southern shore of Lake Victoria, near the apex of the Buchosa peninsula. Its bearings are roughly 2°15' South, 32°15' East. Of an oval shape with a length of just over a mile and a width of half a mile, it lies on an east-south-east and west-north-west axis. In this small area of approximately one hundred and sixty acres, is contained an epitome of the features typical of the fifty islands and islets of south-west Lake Victoria, included in the area best known by the ethnological term of Uzinza. It is for this reason that this small study of what may be considered a crystallization of a peculiarly attractive region of the Territory, may perhaps be of interest.

SOURCES

The survey is based on visits to the island made in 1938, 1939 and 1940, in the months of January, February, April, August (twice), September and November. Owing to the writer's limited knowledge of those subjects, some sections of the survey, notably those on botany and entomology must of necessity be very incomplete. But it is hoped that there is here at any rate a basis for further expert study. I am indebted to Mr Meiklejohn of Cape Town University, who accompanied me on the January visit and was able to add considerably to the ornithological data; to Dr Bell of the Medical Department, who is responsible for the capture and identification of the butterflies, as well as for other valuable observations; to Mr P. G. Shillitoe of the Forest Department who provided the material (including more particularly an extremely useful list of Warongo plant names with their scientific equivalents, the work of the late Mr Burt), on which the botanical identifications are based; and to my wife who made a collection of all the flowering plants of the island.

GEOGRAPHICAL

The island is somewhat inaccessible, being about seventy miles by water from Mwanza, the headquarters of the district in which it is situated, while the path leading from the mainland opposite winds its way through dense bush and forest some twenty-five miles to the Buchosa chiefdom headquarters. It is however a natural half-way halt for small vessels plying along the coast between Mwanza and Nungwe, the port for the Geita goldfield or Nyamirembe, the lake outlet of the Biharamulo District. Kaserazi is marked in the Admiralty Chart as a "wooding-place," and as such must in the past have

SKETCH MAP OF KASERAZI



sheltered many dhows and smaller craft : the gradual clearance of the bigger timber on the island, forestry regulations, the increase in the number of oil-driven vessels, have all contributed to reduce the frequency of callers and the island is now left very much to itself.

CLIMATICAL

At three thousand seven hundred and twenty feet in elevation the island enjoys the general features of the Lake Victoria climate, a cool night and a midday heat more often than not tempered by a breeze. Lying approximately half way along the shore between the dry Musoma and the damp Bukoba areas, its rainfall is moderate and fairly evenly distributed. One might guess at an average annual fall of fifty to fifty-five inches. Discounting the passing effects of storms, the wind conditions are very regular. At the approach of dawn a light south-easterly breeze springs up from the land which gradually increases in intensity as the sun rises. At nine or ten o'clock in the morning a flat calm supervenes, succeeded towards midday by a strong north-easterly wind off the lake. This gradually backs to north-west and dies away at dusk. The south-west of the island is thus nearly always in shelter. It is only during the rains when the black clouds pile up from the north-east that the sudden gale which flies into the teeth of the storm, momentarily throws the sheltered water into confusion. In these conditions I have more than once seen water spouts in the immediate vicinity of the island though I have never known these cyclonic phenomena actually to reach its shores.

GEOLOGICAL

Physically the island is interesting as marking the junction of the granite massif of the Uzinza mainland, with the long belt of Bukoba sandstone. Sosswa Island which lies eight miles to the north is chiefly of sandstone with traces of granite ; Kaserazi is a granite outcrop but the low cliffs of the northern shore exhibit sandstone remnants. These cliffs, some thirty feet in height, are not quite the highest point in the island, for the centre rises perhaps another twenty feet, but generally speaking the island is a tilted and somewhat convex table sloping down to the long sandy southern beach. The soil is rather poor, gritty decomposed granite, but the whole southern shore is bordered by fine white sand which in the south-east corner forms a broad spit. A real sandy beach is a rare feature in southern Lake Victoria and, excluding Bukoba, I know of only four or five scattered among the islands.

BOTANICAL

The vegetation of Kaserazi offers a pleasant variety and without any very exhaustive survey I have noted about seventy species of plant. Owing to the past attentions of fuel cutters, the original lacustrine rain forest is reduced to a remnant in the south-west corner and a few scattered mvule trees (*Chlorophora excelsa*) on the central plateau. About a third of the island is covered with a dense tangle of secondary bush in which sweet scented gardenias and the

wild flame tree (*Erythrina tomentosa*) command attention and an undergrowth of clawing plants impedes progress. Facing the mainland is a fringe of ambatch, its large yellow flowers hardly distinguishable at a distance from the weaver birds which swarm in its branches, while the western flank is fringed with spear grass, reed and water lily. The high central plateau and northern cliffs are covered with a coarse tufty grass but there are not infrequent open spaces where a short rich grass affords good pasture for the stock and the numerous geese. The immediate neighbourhood of the sandy beach is also open and grassy but at some seasons of the year covered with a mat of some yellow flowered procumbent composite, resembling camomile. Finally there are the small patches of cultivation round the human habitations, which, according to the typical Zinza fashion, are an unweeded hotch-potch of bananas, cassava, sweet potatoes, beans, gourds, coffee and *mboga*. Some of the banana plantations have of recent years been badly affected by a disease, which is being investigated by Mr Wight of the Agricultural Department, since the danger of its spread may be a very real and serious problem for elsewhere in Uzinza. It is thought to be caused by a species of weevil.

ZOOLOGICAL

The island is rather too exposed to be attractive to the hippopotami and crocodiles which swarm in the densely fringed bays of the mainland. Recently a crocodile laid its eggs near the sandspit but they were dug up and eaten by some animal. The jumble of rocks at the western end of the island is the haunt of a very large lizard: one seen was over four feet in length. Smaller lizards abound. Snakes are apparently rare: I have seen a bright green species with a white belly carrying a lizard in its mouth. The inhabitants report the occurrence of cobras, puff-adders and pythons. A small buck was once seen which might possibly have been a sitatunga as these animals occur in the swamps of the mainland at no very great distance away. Otters have been noted and the scaly anteater is thought to occur. Generally speaking, animals and reptiles are rare and this possibly accounts for the extraordinary abundance of bird life. To one who has walked for hours through the forests of the neighbouring mainland without seeing more than the occasional mixed flock of shrikes, woodhoopoes, orioles and the like, or a brief glimpse of warbler or bulbul, a visit to the island with a certainty of sixty species and a possibility of many more is pleasant enough. The density in numbers is also remarkable: on one November day a rough estimate of the numbers of birds present totalled to nine hundred or 5.7 per acre. In England the corresponding density of for example an open oakwood has been found to be about 4.5. At times too certain species are present in what seems to be very disproportionate numbers considering the size of the island. Thus Pied Crows, Kites, Yellow-billed Plantain-eaters, Hadadas and Silver-cheeked Hornbills, have on occasion been found in flocks which apparently greatly exceed the food capabilities of the area. Possibly these species use the island as a comparatively safe base from which to visit the mainland for their food. It is to be noted, however, that

of the one hundred and twenty species which have been seen on the island, not more than about thirty stay to breed: the majority of the remainder are intermittent visitors from the mainland whether in search of food or roosts. In addition about twenty-five European migrant species have been seen.

ENTOMOLOGICAL

The island is, happily, not remarkable for the abundance of its insect life. Visitations of "Lake-flies" sometimes occur, and one such noticed in January after a series of storms was somewhat notable: every tree and bush was swarming with these insects so much so that at dusk the island appeared to be pouring out smoke. Mosquitoes are, however, rare and tsetse flies, although a few *Glossina palpalis* were caught under the heavy foliated trees of the western shore, are few in number. *G. morsitans* (and/or, perhaps, *G. swynnertoni*) which abound three miles away on the mainland have never been seen. Other insects noted have been the tiny sugar ant and the hornet, but the lake-fly is undoubtedly the main foodstuff of insectivorous birds. Butterflies though numerous only during the rainy season, comprise several interesting species and of the fifteen species noted no less than five are handsome papilionidae. Several moths occur but have not been identified.

ANTHROPOLOGICAL

The human element in Kaserazi is small but its way of life not uninteresting and typical of that which must have obtained round the lake shores long before the advent of white men. There is evidence that the population has declined in the last few years, owing chiefly to the spread of disease among the staple bananas and partly to the disinclination of the younger men to live so remote and simple a life. At the present day there are seven families living here, nineteen adults and twenty-one children. They appear to be of pure Zinza stock, if one may speak in this way of what must be an extremely mixed tribe: the males affect the short beard and the unmarried females the greased Egyptian-like ringlets typical of the remoter and more unsophisticated Bazinza; most still wear little but a waist-cloth but the European shirt has unfortunately made its appearance and is gaining ground. In spite of a somewhat limited diet they are of good physique and free from disease. The staple food is banana, supplemented by fish (usually smoked), sweet potatoes, a little cassava, milk and very occasionally meat. The latter is only eaten when an animal dies, except for the rare slaughter of a goat to mark a marriage feast. The whole island contains one hundred and three head of cattle and forty-five goats, and each family has its "boma" where the flocks and herds are split up for the night, and a plentiful supply of manure is wasted by burning. These bomas, the vegetable and banana plantations and the huts themselves, are all fenced in by very elaborate live-hedges often ten feet high or more and penetrable only through stiles constructed of forked branches: presumably these hedges were designed as protection against raiding hippo, although under present-day conditions they are scarcely necessary. Only one

family boasts the ownership of fowls, perhaps half a dozen in all, but the eggs are never eaten though often kept a somewhat excessive period to serve as gifts to visiting Europeans.

ECONOMY

The entire economy of the island depends on fishing, and from the profits made thereby, clothes, the copper wire, vast quantities of which adorn the ankles of the women, the twine and other adjuncts of their fishing tackle and the ten-shilling tax are all comfortably purchased. When one is told that fish fetch only four shillings a hundred in the Bukoba market (where, a three- or four-day canoe trip, all the catch is sent, thence chiefly to be re-exported to Uganda), one is inclined at first to think that it must be hard to cover the cost even of necessities, let alone copper wire. But the ease and rapidity of fishing off this island is extraordinary: in half an hour one evening, I have seen the nets bring in over a hundred butterfish and fifty-five large carp (*Tilapia*)—some six shillings' worth in all. It is true that this was in August, near the peak of the season, which is reckoned to be September, but the only really bad months in the year for fishing are from February to April, the main breeding season of Lake Victoria fish. A rough calculation allowing an average catch of three shillings' worth of fish during the other nine months of the year gives the annual income from this source as somewhat over £40 or about Shs 120/- per family. This is very much the same as is earned on the average by a cotton planter of the Buchosa mainland in an averagely good year, but the figure of £1 per head per annum for the population of this fairly remote island with its low cost of living probably represents a greater degree of opulence than it would on the mainland. Another advantage is that fish are eatable, cotton is not.

METHODS OF FISHING

Three species of fish are normally caught and three methods used in catching them. The three species are the ningo, or butterfish, a small blue species, the mboza, or carp (*Tilapia esculenta*), and the kambali mamba, a term used for catfish and lungfish. The first and most popular method of fishing is by a drag net. For this a canoe is essential and the island possesses three of these vessels, owned communally. The construction of these is according to the normal Lake pattern, a heavy log keel with side planks stitched on with banana fibre and braced with cross bars forming seats. A double prow is thus formed which has a good effect in breaking the force of waves and in general the boats are quite seaworthy though difficult for the inexperienced to balance. The material used nowadays, since mvule (*Chlorophora*) was placed on the protected list, is muenzaenzi wood (*Albizia*) and permission to fell and bring the wood from the mainland must be obtained from the Chief. A canoe takes a month to build and lasts five years, after which the holes which take the banana fibre stitching become worn too large to be caulked. The drag-net used is made now of fine duka-bought string, woven to about a two-inch mesh: it may be about one hundred feet long and seven feet



The net ready for hauling



Nearly in : Spearing escaping fish



Disentangling the catch

broad; on one side are attached stone weights and on the other a series of bark floats. Before use it is folded carefully on to a long pole, one end of the net is then attached to the shore and the pole and remainder of the net loaded on a canoe. The canoe then makes a wide circle playing out the net behind and finally brings the other end of the net back to shore about ten yards from where the first end was fastened. The wide semicircular trap thus formed is then slowly pulled in, the circle slowly narrowing: fishermen stand by with three-pronged spears and impale any large fish which attempts to leap the barrier; finally with swift pulls the central part of the net is rushed ashore full of struggling fish—an average catch being about one hundred and fifty. In the process of disentangling the fish, the fragile net is always badly torn and a day or two will be required for patching and drying, the net being mounted on poles along the shore. The catch is gutted and spread on a platform above a shallow pit in which a slow fire is kept burning. The resultant article keeps good indefinitely and is not unpalatable.

The other two methods of fishing used are the semicircular fence traps erected along the lower lying parts of the shore: a small entrance is left between each semicircle through which mud fish enter and are then speared as they try vainly to escape through the enclosing wall; and secondly a lobster pot type of trap usually constructed in this area from the leaves of the borassus palm, and left overnight marked by a tall reed, well out into the lake. Both these types of trap are, however, liable to damage by crocodiles and the catch from them is very small.

CONCLUSION

These processes of fishing comprise almost the whole of the work which the fortunate male member of this island community is called upon to perform. The banana plantations require no attention, the cultivation of the small plots is left to the women, the herding to the children. The position of the island headman who draws the princely salary of fifteen shillings a year is an easy one. He should of course keep his eye on the visiting fishermen, parties of whom are usually camped on the island between June and October: they come from the Kimwani chieftdom of Biharamulo and Ihangiro in Bukobā. It is doubtful if these visitors, who are the only cause of friction on the island, seriously deplete the abundant supplies of fish and timber, but their carelessness sometimes results in damaging grass fires. From them, however, and his annual excursion to Bukoba market, the man of Kaserazi derives his news of the outside world.

The disadvantages of the islander's life are few: he enjoys good health, and an easy livelihood, and although this very ease makes him indolent and incapable of making the best use of his opportunities, yet he is perhaps dimly aware of his good fortune to be living in an island paradise.

Appendix A

BIRDS

I.—THIRTY-TWO SPECIES WERE NOTED ON EVERY VISIT

(Jan., Feb., Apr., Aug., Sept., Nov.)

1. White-breasted Cormorant, *Phalacrocorax carbo lugubris*.
2. Reed Duiker, *Phalacrocorax a. africanus*.
3. African Darter, *Anhinga r. rufa*.
4. Goliath Heron, *Ardea goliath*.
5. Little Egret, *Egretta g. garzetta*.
6. Buff-backed Heron, *Bubulcus ibis*.
7. Hadada, *Hagedashia hagedash erlangeri*.
8. Egyptian Goose, *Alopochen aegyptiacus*.
9. African Black Kite, *Milvus migrans parasitus*.
10. African Sea-Eagle, *Cuncuma vocifer*.
11. Spur-winged Plover, *Hoplopterus spinosus*.
12. Common Sandpiper, *Actitis hypoleucos*.
13. Water-Dikkop, *Burhinus v. vermiculatus*.
14. Grey-headed Gull, *Larus cirrocephalus*.
15. Ring-necked Dove, *Streptopelia capicola tropica*.
16. White-browed Coucal, *Centropus superciliosus loandae*.
17. Abyssinian Grey Plantain-eater, *Crinifer zonurus*.
18. Pied Kingfisher, *Ceryle r. rudis*.
19. Little Bee-eater, *Melittophagus pusillus meridionalis*.
20. Silvery-cheeked Hornbill, *Bycanistes cristatus*.
21. African Pied Wagtail, *Motacilla aguimp vidua*.
22. Brown-capped Geelgat, *Pycnonotus t. tricolor*.
23. Swamp Flycatcher, *Alseonax aquaticus infulatus*.
24. Paradise Flycatcher, *Tchitrea viridis*.
25. Grey-backed Glasseye, *Camaroptera brevicaudata* subsp.
26. Rattler Grass-Warbler, *Cisticola cheniana* subsp.
27. Striped Grass-Warbler, *Cisticola natalensis valida*.
28. Pied Crow, *Corvus albus*.
29. Red-chested Sunbird, *Nectarinia e. erythroceria*.
30. Masked Weaver, *Ploceus intermedius* subsp.
31. Mwanza Slender-billed Weaver, *Ploceus pelzelni tuta*.
32. Tawny-flanked Long-tail, *Prinia mistacea* subsp.

II.—FIVE SPECIES WERE NOTED IN ALL MONTHS AS ABOVE,
EXCEPT FOR ONE AS SHOWN

33. Lesser Black-backed Gull (Aug.), *Larus f. fuscus*.
34. Red-capped Robin Chat (Feb.), *Cossypha natalensis*.
35. Swallow (Aug.), *Hirundo rustica* subsp.
36. Uganda Swallow (Nov.), *Hirundo angolensis arcticincta*.
37. Red-billed Oxpecker (Apr.), *Buphagus erythrorhynchus caffer*.

III.—TWELVE SPECIES WERE NOTED IN FOUR MONTHS,
BUT *not* IN THE TWO SHOWN IN BRACKETS

38. Grey Heron (Jan. Feb.), *Ardea c. cinerea*.
39. Crowned Crane (Feb. Apr.), *Balearica regulorum gibbericeps*.
40. Wattled Plover (Jan. Feb.), *Afribyx senegallus lateralis*.
41. Emerald-spotted Wood-Dove (Aug. Sept.), *Turtur c. chalcospilos*.
42. Uganda Green Pigeon (Feb. Aug.), *Vinago calva salvadorii*.
43. Pigmy Kingfisher (Feb. Apr.), *Ispidina picta* subsp.
44. Yellow Wagtail (Aug. Sept.), *Budytes flavus* subsp.
45. Grey-headed Wagtail (Aug. Sept.), *Budytes flavus thunbergi*.
46. Sedge-Warbler (Aug. Sept.), *Acrocephalus schoenobaenus*.
47. Willow-Warbler (Aug. Sept.), *Phylloscopus trochilus* subsp.
48. East African Sand-Martin (Nov. Jan.), *Riparia paludicola ducis*.
49. Blue-eared Glossy Starling (Aug. Nov.), *Lamprocolius chalybeus sycobius*.

IV.—FOURTEEN SPECIES WERE NOTED IN THE THREE
MONTHS SHOWN IN BRACKETS

50. Sacred Ibis (Apr. Aug. Sept.), *Threskiornis a. aethiopicus*.
51. Open-bill Stork (Jan. Feb. Nov.), *Anastomus l. lamelligerus*.
52. Gull-billed Tern (Apr. Aug. Sept.), *Gelochelidon n. nilotica*.
53. Blue-headed Wagtail (Jan. Apr. Nov.), *Budytes flavus* subsp.
54. Kenya Richard Pipit (Jan. Aug. Sept.), *Anthus richardi lacuum*.
55. Tabora Black-faced Babbler (Jan. Feb. Aug.), *Turdoides melanops sharpei*.
56. Mwanza Yellow-throat (Jan. Feb. Nov.), *Atimastillas flavicollis shelleyi*.
57. Garden-Warbler (Jan. Feb. Apr.), *Sylvia borin*.
58. Reed-Warbler (Aug. Sept. Nov.), *Acrocephalus scirpaceus scirpaceus*.
59. Ruwenzori Wren Grass-Warbler (Aug. Sept. Nov.), *Cisticola juncidis perennea*.
60. Sand-Martin (Jan. Feb. Nov.), *Riparia r. riparia*.
61. Uganda Orange Weaver (Aug. Sept. Nov.), *Ploceus aurantius rex*.
62. Pin-tailed Whydah (Jan. Feb. Nov.), *Vidua macroura*.
63. Uganda Red-billed Fire-Finch (Jan. Feb. Nov.), *Lagonosticta senegalensis ruberrima*.

IV.—TWENTY-FOUR SPECIES WERE NOTICED IN THE TWO
MONTHS SHOWN

64. African Yellow-billed Egret (Apr. Aug.), *Mesophoyx intermedius brachyrhynchus*.
65. Purple Heron (Jan. Feb.), *Pyrhrherodia p. purpurea*.
66. Green-backed Heron (Jan. Nov.), *Butorides striatus atricapillus*.
67. Hammerkop (Apr. Aug.), *Scopus umbretta bannermani*.
68. Osprey (Jan. Feb.), *Pandion haliaëtus*.
69. Lily-Trotter (Aug. Sept.), *Actophilornis africanus*.
70. Red-eyed Dove (Feb. Apr.), *Streptopelia s. semitorquata*.
71. Mourning Dove (Jan. Feb.), *Streptopelia decipiens permista*.
72. Tambourine Dove (Jan. Feb.), *Tympanistria t. fraseri*.
73. Klaas' Cuckoo (Jan. Feb.), *Lampromorpha klaasi*.
74. Red-and-black-billed Kingfisher (Jan. Feb.), *Halcyon senegalensis cyano-leucus*.
75. Mozambique Nightjar (Jan. Apr.), *Caprimulgus f. fossii*.
76. Palm Swift (Feb. Apr.), *Tachynautes parvus myochrous*.
77. Speckled Mousebird (Jan. Aug.), *Colius striatus* subsp.
78. Wells' Wagtail (Feb. Nov.), *Motacilla capensis wellsi*.
79. Wheatear (Feb. Apr.), *Oenanthe o. oenanthe*.
80. Marsh Warbler (Jan. Nov.), *Acrocephalus palustris*.
81. Swamp Warbler (Feb. Nov.), *Calamoecetor leptorhyncha macrorhynchus*.
82. Amethyst Starling (Jan. Apr.), *Cinnyricinclus leucogaster verreauxi*.
83. Grey-headed Sparrow (Jan. Feb.), *Passer griseus suahelicus*.
84. Golden-backed Weaver (Jan. Feb.), *Ploceus jacksoni*.
85. Camburn's Golden Weaver (Jan. Nov.), *Ploceus xanthops camburni*.
86. Fire-crowned Bishop (Jan. Feb.), *Euplectes hordacea sylvatica*.
87. Bronze Mannikin (Jan. Feb.), *Spermestes cucullatus scutatus*.

V.—FORTY-THREE SPECIES HAVE BEEN OBSERVED ON SINGLE
OCCASIONS ONLY, AS SHOWN

88. African Dwarf-Bittern (Sept.), *Ardeirallus sturmii*.
89. Great White Heron (Feb.), *Casmerodius albus melanorhynchus*.
90. White-bellied Stork (Feb.), *Sphenorhynchus abdimii*.
91. Peregrine Falcon (Jan.), *Falco peregrinus* subsp.
92. Hobby (Nov.), *Falco s. subbuteo*.
93. Wahlberg's Eagle (Feb.), *Aquila wahlbergi*.
94. Crowned Hawk-Eagle (Feb.), *Stephanoaëtus coronatus*.
95. Shikra (Nov.), *Astur badius* subsp.
96. Gabar Goshawk (Nov.), *Melierax gabar*.
97. Marsh Harrier (Jan.), *Circus a. aeruginosus*.
98. African Harrier Hawk (Feb.), *Gymnogenys t. typicus*.
99. Little Stint (Nov.), *Erolia minuta*.
100. Sanderling (Nov.), *Crocethia alba*.
101. Wood-Sandpiper (Apr.), *Tringa glareola*.

102. Blue-spotted Wood-Dove (Feb.), *Turtur afer kilimensis*.
103. Green Coucal (Apr.), *Ceuthmochares aereus australis*.
104. Brown Parrot (Apr.), *Poicephalus meyeri* subsp.
105. White-throated Bee-Eater (Feb.), *Aerops albicollis major*.
106. Crowned Hornbill (Feb.), *Lophoceros melanoleucos* subsp.
107. Plain Nightjar (Jan.), *Caprimulgus inornatus*.
108. Narina Trogon (Aug.), *Apaloderma n. narina*.
109. Tree-Pipit (Apr.), *Anthus t. trivialis*.
110. Spotted Flycatcher (Apr.), *Muscicapa striata* subsp.
111. Chin-spot Flycatcher (Nov.), *Batis molitor puella*.
112. Kurrichane Thrush (Feb.), *Turdus libonyanus* subsp.
113. White-browed Robin-chat (Nov.), *Cossypha heuglini* subsp.
114. Olivaceous Warbler (Nov.), *Hippolais pallida* subsp.
115. African Reed-Warbler (Aug.), *Acrocephalus bacticatus cinnamomeus*.
116. Smaller Striped Swallow (Aug.), *Hirundo abyssinica unitatis*.
117. Pale Red-tailed Shrike (Nov.), *Lanius cristatus isabellinus*.
118. Brown-headed Bush Shrike (Jan.), *Tchagra australis* subsp.
119. Sulphur-breasted Bush Shrike (Nov.), *Chlorophoneus sulfureopectus* subsp.
120. European Golden Oriole (Sept.), *Oriolus o. oriolus*.
121. Senegal Golden Oriole (Nov.), *Oriolus a. auratus*.
122. Wattled Starling (Aug.), *Creatophora carunculata*.
123. Scarlet-breasted Sunbird (Jan.), *Chalcomitra senegalensis* subsp.
124. Spectacled Weaver (Jan.), *Ploceus ocularius* subsp.
125. Dioch (Feb.), *Quelea quelea* subsp.
126. Black-and-white Mannikin (Nov.), *Spermestes bicolour stigmatophorus*.
127. Central African Melba (Aug.), *Pytilia melba belli*.
128. Waxbill (Feb.), *Estrilda astrild* subsp.
129. Yellow-fronted Canary (Aug.), *Serinus m. mozambicus*.
130. White-bellied Canary (Aug.), *Serinus d. dorsostriatus*.

GENERAL NOTES

1. The following number of species were found in the six months during which the island was visited :—

January	77	August	57
February	77	September	53
April	61	November	72

2. The one hundred and thirty species listed may perhaps be classed as follows :—

Resident and breeding ...	29 species	Palearctic migrants ...	24 species
Regular visitors ...	25 „	Other long-distance	
Casual visitors	42 „	migrants ...	10 „

3. A count of the whole island in November revealed the presence of about nine hundred birds of seventy-two species: thirty species, however, accounted for just over eighty per cent of the birds noted.

Appendix B

INDIGENOUS PLANTS NOTED ON KASERAZI ISLAND

I.—TREES, TWENTY-SIX SPECIES

	Kizinza				Scientific names
1. Mvule	...	...	...	...	<i>Chlorophora excelsa</i> .
2. Msambya	...	...	...	...	<i>Markhamia platycalyx</i> .
3. Muenzaenzi	...	...	...	...	<i>Albizzia gummifera</i> .
4. Mchimba	...	...	...	...	<i>Morus lactea</i> .
5. Mkobakobe	...	...	...	...	<i>Baikiaea eminii</i> .
6. Msangati	...	...	...	...	<i>Canthium vulgare</i> .
7. Msangati	...	...	...	...	<i>Phyllanthus discoideus</i> .
8. Mwitachiza	...	...	...	...	<i>Acacia usambarensis</i> ?
9. Mutoma	...	...	...	...	<i>Ficus</i> sp.
10. Mrunda	...	...	...	...	<i>Ficus</i> sp.
11. Murinzi	...	...	...	...	<i>Erythrina abyssinica</i> .
12. Mukonya	...	...	...	...	<i>Annona chrysophylla</i> .
13. Mkurukuru	...	...	...	...	<i>Euphorbia bilocularis</i> .
14. Mkarakara	...	...	...	...	<i>Jatropha curcas</i> ?
15. Mugomba	...	...	...	...	<i>Phyllanthus engleri</i> ?
16. Mukoko	...	...	...	...	<i>Baphiopsis stuhlmannii</i> ?
17. Mudso	...	...	...	...	<i>Teclea nobilis</i> .
18. Muhurura	...	...	...	...	?
19. Mrunziwembira	...	...	...	...	<i>Ziziphus mucronata</i> .
20. Mubaruka	...	...	...	...	<i>Euclea lanceolata</i> .
21. Muryambwa	...	...	...	...	<i>Gardenia imperialis</i> .
22. Mchundwanjenji.					
23. Msengasenge.					
24. Mnyabwita.					
25. Muzuruzi.					
26. Mwatabusindi.					

II.—SHRUBS, TWENTY-SIX SPECIES

	Kizinza				Scientific names
27. Mwerezi	...	...	...	...	<i>Aeschynomene glutinosa</i> .
28. Rujeje	...	...	...	...	<i>Acacia pennata</i> .
29. Mhihi	...	...	...	...	<i>Lasiodiscus mildbraedii</i> .
30. Mkarekare	...	...	...	...	<i>Ricinus communis</i> .
31. Mseka	...	...	...	...	<i>Ximenia caffra</i> .
32. Msunsu	...	...	...	...	<i>Commiphora</i> sp.
33. Mkome	...	...	...	...	<i>Strychnos spinosa</i> .
34. Menzimazima.					
35. Musenene.					

II.—SHRUBS, TWENTY-SIX SPECIES (*contd*)

	Kizinza	Scientific names
36. Ruhanya.		
37. Mtandarike.		
38. Myurukize.		
39. Kangamunya.		
40. Malaratare.		
41. Mulungundu.		
42. Ruzenya		<i>Dracaena</i> sp. ?
43. Menyesaidza.		
44. Menyehasu.		
45. Kafura.		
46. Mchureza. (Soap-bush.)		
47. Ruihura.		
48. Murangarara		<i>Lansea fulva</i> .
49. Marunga.		
50. Masenyange. (Cactus ?.)		
51. Manyara		<i>Euphorbia tirucalli</i> .
52. Mtungu		<i>Capparis tomentosa</i> .

III.—HERBS INCLUDING GRASSES, TWENTY-FOUR SPECIES

	Kizinza	Scientific names
53. Marere		<i>Nymphaea capensis</i> .
54. ———		<i>Epilobium</i> sp., Willow herb.
55. Msurera		<i>Compositae</i> ?
56. Luvingo		<i>Pennisetum purpureum</i> .
57. Ruzinga		<i>Convolvulus</i> sp. ?
58. Mwitanzoka		<i>Papilionaceae</i> ?
59. Ichisaka		<i>Synadenium grantii</i> .
60. Bulembe		<i>Haemanthus</i> sp
61. Agechyanda.		
62. Masahunga		<i>Phragmites</i> sp.
63. ?		<i>Gloriosa virescens</i> .
64. ? (Dandelion-like) ...		<i>Compositae</i> .
65. Mateke.		
66. Matizo.		
67. Oburudze.		
68. Oruenze (a succulent).		
69. Marangaro.		
70. Nyarobuabi.		
71. Kabindisi.		
72. Kubiishe.		
73. Msura.		
74. Bunswi (a coarse tufted grass).		
75. Ngunga (a fine procumbent grass).		
76. Ezubwa (a coarse procumbent grass).		

Appendix C

BUTTERFLIES NOTED ON KASERAZI ISLAND

A.—DANAIDIDAE.

1. *Danaida petiverana* (*D. liminiace petiverana*).
2. „ *chrysippus*.
3. „ *psyttalea* (*Amauris damocles psyttalea*).
4. „ *dorippus* ?.

B.—PAPILIONIDAE.

5. *Papilio dardanus*.
6. „ *nireus*.
7. „ *phorcas ansorgei*.
8. „ *angolanus* or *taboranus*.
9. „ *demodocus*.

C.—PIERIDAE.

10. *Eronia cleodora* (perhaps *E. c. erxia*).
11. *Pieris tanganyikae*.
12. *Catopsilia florella*.
13. *Mylothris agathina*.

D.—NYMPHALIDAE.

14. *Precis clelia*.

E.—LYCAENIDAE.

15. *Cupido iobates* ?.

F.—ACRAEIDAE.

16. *Acraea* sp. ? (near *egina*).

Two other unidentified species were also seen one resembling a *Pseudacraea* and one like a fritillary.

The Crocodiles of Tanganyika Territory

By A. Loveridge

(Museum of Comparative Zoology, Cambridge, Mass.)

TANGANYIKA is unique among the East African territories in possessing two species of these huge reptiles. The Slender-snouted Crocodile (*Crocodylus cataphractus*) of the Gambia reaches its eastern limits at Ujiji, Lake Tanganyika. It was near the mouth of the Luiche (Luitsche) River, south of Ujiji, that the first example was obtained by Lieutenant Bischoff, as recorded by Tornier in 1902.

In 1930, when visiting Ujiji, I engaged canoemen to take me to the Luiche up which we paddled for a great distance. Owing to the unprecedented rains that year, the river was still in flood, having overflowed its banks and inundated acres of surrounding country. Thus no crocodiles were seen though the slender-snouted species appeared well known to the local fishermen and I saw a skull at the office of the Provincial Commissioner. It may be assumed that this western species gained access to the lake by the Lukiga River just north of Albertville.

The two kinds may be recognized by applying the following key:—

Snout very slender, at least twice as long as its breadth at the base; shields on nape in two longitudinal series, continuous, or subcontinuous, with those on the back *C. cataphractus*.

Snout moderate, once and two-thirds to twice as long as its breadth at the base; shields on nape consist of a transverse row of four or six behind the occiput, separated from a second group of four large shields which form a square which is usually flanked on either side by a smaller shield and more or less discontinuous from those on the back *C. niloticus*.

The Nilotic Crocodile (*Crocodylus niloticus*) on the other hand is not only the most abundant species in Lake Tanganyika, but is present in Lakes Victoria and Nyasa and the principal rivers such as the Pangani, Wami, Kingani, Rufiji and Rovuma. Despite its wide distribution, however, there is much to be learned of its habits and behaviour within the Territory.

What, for example, is the maximum size attained in Tanganyika? The largest record would appear to be that of six and a half metres, or about twenty-one feet, for a crocodile killed by the Duke of Mecklenberg near Mwanza in May 1905. This is an unsatisfactory one, however, being based

on a verbal report of the Duke to Mr B. Eastwood while *en route* from Mwanza to Bukoba and published many years later by Mr C. W. Hobley⁽¹⁾, as exceeding an authentic eighteen-foot example killed at the Murchison Falls by the late R. J. Cuninghame.

It always seems ridiculous that such huge creatures should propagate by eggs that are scarcely larger than those of a duck, nevertheless such is the case. Though considerable variation is displayed, a crocodile's egg is approximately three and a half inches in length by about two inches in diameter, as neither end is pointed the shape is somewhat cylindrical. The shell is hard, brittle, glossy and white.

The female crocodile excavates a pit eighteen to twenty-four inches in depth undercutting the sides so that the eggs roll towards the periphery of the hole when dropped upon the slightly concave central portion. Sand is scraped into the excavation to cover them, then a second layer of eggs laid above the first, after which the hole is filled in so that the site is indistinguishable from the surrounding ground. According to Voeltzkow⁽²⁾—to whom we are indebted for this information—oviposition takes place at night, generally just before dawn.

Voeltzkow kept a number of eggs buried under two feet of sand in a box in his room. When he struck the box, or even as he walked past it, the young reptiles, still in their shells, emitted a hiccough-like sound which was audible at the further side of the room. Taken in conjunction with the fact that the sand and eggshells appeared to have been scraped from nests from which the young had departed, he concluded that after the lapse of about three months—which constitutes the incubation period—the mother crocodile returns to dig out the eggs. To verify this hypothesis, Voeltzkow caused a fence to be built around a nest: the parent crocodile returned and partially wrecked the barricade, necessitating the erection of a second and stouter one. The mother scraped a deep hole beneath this fence but failed to reach the nest before the young emerged.

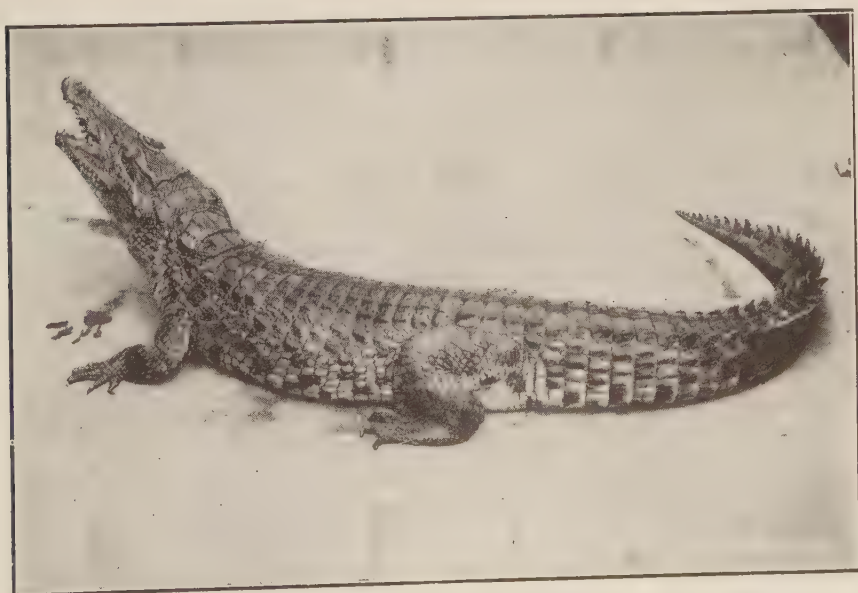
In January 1921, Mr C. B. Goss found a crocodile's nest on the banks of the Mkata River, from which the young were hatching. They accomplish this by means of an egg-tooth on the end of the snout which they employ as an augur. On emergence young crocodiles are just under a foot in length or about four times the length of the egg from which they have escaped. The little creatures are quite snappy, knowing perfectly well how to use their jaws. The six sent to me by Goss arrived on the 26th January and were put into an enclosure in the garden. Two nights later some animal, which I judged from the spoor to have been a civet, killed and ate five of them and decapitated the sixth. The following week, however, Goss arrived bringing three more. These I fed on meat, but they also helped themselves to frogs. I watched one make an unsuccessful attempt to seize a tree-frog which ventured too near. The tail of the little crocodile wriggled and twitched, like that of a cat which is about to pounce upon a bird, before its owner snapped at the amphibian.



Photo by Herbert Lang

[Courtesy of Amer. Mus. Nat. Hist.]

Sharp-snouted Crocodile (*Crocodylus cataphractus*). Found only in Tanganyika Territory in the vicinity of Ujiji; principally a fish eater and common in West Africa



[Photo by R. L. Ditmars]

[Courtesy of New York Zoological Society]

Nile Crocodile (*Crocodylus niloticus*). This is the species which is so widespread throughout the Territory, causing the deaths of many natives annually

Quite close to the banks of the Mkata River, some ten miles from the station, I came on a small pool surrounded by a network of spoor from which it was evident that the water was being visited nightly, not only by antelope but by lion and leopard also. In consequence I decided to spend the night in a tree overhanging the pool; before the moon appeared a lion arrived and started lapping. The reason for animals drinking at the stagnant pool in preference to the nearby river became apparent: it was evidently on account of the abundance of crocodiles in the latter. I shall never forget the continuous "clap-clopping" noise which they made until dawn. The natives said that the reptiles struck fish out of the water with their tails and snapped at them with their jaws before their finny prey fell back into the water. Possibly after seizing a fish they like to turn it in their jaws to swallow it headfirst. Whatever the correct explanation, it is quite certain that fish constitute their principal food, though the larger saurians will take any warm-blooded animal that they are able to overpower when opportunity offers.

At Game Department Headquarters there used to be some interesting items recovered from the stomachs of crocodiles; among these I recollect a horse-shoe and a large piece of ivory tusk, both found in the same reptile. The Game Warden at that time, Mr C. F. Swynnerton, exhibited the stomach contents of one crocodile to a meeting of the Zoological Society of London. These were, according to a press cutting, as follows: "Apart from antelope hoofs, tortoise shells and porcupine quills, there were a large number of metal bangles, such as are worn as bracelets and anklets by native women, beads and a long strand of metal cord. The strand of cord solved the mystery of the disappearance of a native boy, who was known to frequent the neighbourhood of the river bank in order to collect wood, the cord being similar to what he used for tying his bundles together."

An acquaintance related to me how, when sitting with a friend one evening on Ruvu Bridge, he saw a pair of human legs appear for a moment in mid-stream; they kicked vigorously, then disappeared. A few minutes later some natives came running down the bank shouting, and throwing stones in the water; on being questioned they said that one of their companions had gone down to the river to draw water and, hearing a cry, they imagined that he had been carried off by a crocodile.

On three occasions I crossed and recrossed the Mbaka River in an unusually crazy dugout tree-trunk; in fact during the ten days spent at Mwaya, in the vicinity of Lake Nyasa, it was a matter of daily routine to cross some river or other, but the dugout available on the Mbaka was an exceptionally unstable and leaky affair with never less than three or four inches of water in the bottom. One day this dugout capsized both on the outward and return journeys and shot my "boys" into the water. Salimu was highly incensed for, in addition to getting the cartridges wet, he lost some money and other belongings which were in his pocket at the time. He said that the ferryman informed him that never a day passed without the dugout upsetting.

A few days later I crossed at seven o'clock in the morning returning about two o'clock in the afternoon, to be told that in the interval two women had been taken by crocodiles as they waded into the river to fill their water-pots. Turning to the chief's son, who accompanied me, I asked him how many people were taken by crocodiles in his district each month. He replied, "about five, mostly women when engaged in drawing water." I asked him why—seeing that bamboo was abundant—they did not bail the water from a distance by means of a gourd attached to a bamboo as was done by intelligent natives in the Morogoro district. "Too much trouble," he relied with a shrug of his shoulders.

In strange contrast to the voracity of the crocodiles at Mwaya was their apparent indifference to the natives at both Nyamkolo and Kasanga near the southern end of Lake Tanganyika. At both places the natives, particularly the children, bathed freely near the shore; at Nyamkolo in plain sight of a huge crocodile lazily basking on the surface less than a hundred yards away. In answer to my enquiries nobody appeared to recall a case of a crocodile carrying off any one. Nevertheless, my native personnel refused to bathe, preferring to bail out water and carrying it to a safe distance before performing their ablutions. When I invited Salimu's attention to the fact that even little children were bathing, though he and his companions were not, he replied: "*Bwana*, in many houses you may have noticed that a dog and cat will live together in amity, but if a strange dog or cat appears the results may be different. These people and these crocodiles know each other of old, but I do not know these crocodiles nor they me."

Naturally there was much talk of crocodiles during the East African campaign; our column lost an ox and a horse in the Pangani near German Bridge, and similar misfortunes elsewhere made the troops a little nervous. In this connection an amusing incident occurred at Tulo, near Dutumi. I had been walking along a tributary of the Mgeta River with a companion when he sighted what was possibly a twelve-foot crocodile on a sandbank. We made a detour and came out on the bank immediately above the sleeping reptile. My comrade fired and hit it, but the reptile fell back into the swollen waters of the swiftly flowing stream. Shortly after we reached camp where many men were bathing in this self-same river. Suddenly some one raised the cry of "mamba" and there was a wild splashing for the bank. The latter, steep and slippery at any time, was made doubly so by the dripping bodies of a score of men who kept sliding back into the stream which was quite five feet deep beneath the bank. Before they had all scrambled out, the alleged "mamba" arrived opposite them. It was the swollen body of a horse which from time to time just showed above the surface as it bobbed up and down, or twisted about, as the current swept it along. It was just one of the many poor, tsetse-stricken beasts which were dying near the bivouac of a mounted column encamped a few miles further up the river.

As is well known, with a blow from its tail, a crocodile will knock the legs from beneath an unsuspecting man. So it came about that during the later stages of the campaign, when native porters were employed in the extensively flooded areas of the Rufiji delta, many lost their lives to these reptiles.

During the German régime the government offered a bounty for crocodiles and their eggs, a "heller" apiece for the latter, I believe, and something like a quarter-rupee for the reptiles themselves; but I write from memory only. During the war a story was current, with how much truth in it I cannot say, that a European living near Lake Victoria doubled the reward on eggs as an inducement to the natives to bring them to him instead of to the district officer. He kept the eggs until they hatched, sent the young crocodiles to the nearest official depot, then claimed the larger reward. It was said that he had started legal proceedings to enforce his claim to the bounty just before the outbreak of hostilities.

However that may be, the example set by their predecessors was followed by the Tanganyika Administration to the extent that a reward of one cent an egg was offered. So astonishing were the numbers brought in to Mwanza, and certain other stations, that a reduction in the reward was made and finally it had to be abolished altogether. The following figures for the first six months of 1922 will assist the reader in appreciating the embarrassment of the administrative officer at Mwanza whose staff became preoccupied with counting eggs, and who complained that the aroma resulting from breaking the eggs—each egg had to be smashed when paid for—was overpowering:—

Mwanza	...	...	...	...	104,602	eggs
Musoma	...	...	...	...	15,493	,,
Kigoma	...	...	...	...	230	,,
Bukoba	...	...	...	...	51	,,
Tabora	...	...	...	...	45	,,
Namanyere	...	...	...	...	44	,,
Lipumba	...	...	...	...	37	,,

A total of 120,502 ,, in six months.

The last four items doubtless represent the product of four nests. It is a pity that no economic use can be found which would make it worth while to collect the eggs. Roosevelt⁽³⁾ writes of shooting a ten-foot female crocodile which held fifty-two eggs which they scrambled, ate, and found good. Once laid, however, crocodile eggs are reputedly useless as they are said to contain an embryo already an eighth of an inch in length when deposited. This is a statement which might well be subjected to checking.

It is unfortunate that there are so few natural checks on the multiplication of these huge creatures. The Nilotic Monitor lizard (*Varanus niloticus*) systematically preys upon the eggs which it digs out of the nests, it is the more regrettable, therefore, that monitor skins are in much demand for the fancy

leather industry. It would be advisable to watch the number of skins exported and, should the number reach a high figure, impose restrictions. Unfortunately, though the good they do in many directions probably outweighs the evil, monitors rob hen roosts as well as the nests of game birds.

While freshly-emerged crocodiles fall victims to the larger water-birds and many predatory mammals, man himself is the only enemy of the adults. To those living near crocodile-infested waters who find time hang heavy on their hands, I would recommend an article⁽⁴⁾ by Mr W. H. O. Shortt who furnishes very concise directions of the methods he employs in hunting crocodiles from a canoe for sport. The outfit he suggests includes four harpoons and eighty feet of rope, for Mr Shortt makes a point of recovering the crocodiles he shoots that suitcases may be made from their hides.

Unhappily, the tenacity of life displayed by crocodiles is such that they often return to the water after receiving a bullet which will prove fatal ultimately. To put a crocodile out of action immediately, the shot must reach the brain or spinal cord close to the base of the skull. To place a bullet in the brain it is well to aim just behind the ear-drum or, if firing from above, then at the occipital region. While it is true that a bullet striking a plate of the dermal armature obliquely may be deflected, the modern high-velocity pellet, correctly aimed, can penetrate a crocodile's hide at any point.

Summoned to shoot a crocodile after the taking of the two women on the Mbaka River, I found it lying among sedges in shallow water on the further side of the river. Most of the creature was effectually concealed by the sedges but I could just see the top and back of its head and the first shot, a .351 soft-nose bullet right between the eyes, was instantaneous in effect. A violent lashing of the tail accompanied by quivering of the limbs and in a minute all was still except for an ever widening patch of red upon the water. The length, however, was only ten feet and four inches, and the stomach held nothing but pebbles and sand.

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(²) VOELTZKOW, 1891, *Sitz. Akad. Wiss. Berlin*, p. 115, and 1893, p. 347.

(³) ROOSEVELT, 1910, *African Game Trails*, p. 417.

(⁴) SHORTT, 1921, *Journ. Bombay Nat. Hist. Soc.*, 28, p. 76.

Bird-Names used in Coastal North-Eastern Tanganyika Territory

By R. E. Moreau

WHEN one is trying to get the names of natural objects out of an African, however successfully, he is almost sure to make some remark to the effect that of course the old people knew far more about these things than we do nowadays. Sometimes he adds rather unctuously that they had nothing else to bother about but *nyama* and *majani*. Both remarks probably contain much truth, and this provides one good reason for trying to record native names without waiting any longer. A second good reason, if one were needed, is that some knowledge of them is an important adjunct to the teaching of biology in schools.

For several years I have been collecting bird names incidentally; and in this list I am able to record from one to seven names (distinct roots or descriptive expressions) for a large proportion of all the birds that the ordinary man, not being an ornithologist, is likely to differentiate in a strip about fifty miles wide extending from Tanga to the mouth of the Rufiji. About four hundred and fifty different names appear in the conservatively selected list that follows; but it could certainly be so greatly extended that I would claim only that it provides a good start.

Some bird names have been recorded from this area by ornithologists, mostly by Stuhlmann many years ago, and some by lexicographers. In general, as was almost inevitable, the European names given by the latter are often inaccurate or completely vague. In the following list I have included only those names that I have myself been given and have reason to accept as reliable, though some of the work has been done through the intermediary of an African collector. I am on the whole fairly confident that none of those now recorded is the mere *jeu d'esprit* of a bored or waggish witness. About another three hundred names on my files await verification.

In the list abbreviations denote origin as follows:—

- D. ... Digo, at Tanga and northwards.
- B. ... Bondei, Pangani to a little west of Muhesa.
- Sb. ... Sambaa.
- Z. ... Zigua.
- R. ... Zaramu.
- K. ... Kami, north Uluguru.
- W. ... Mafia Island (Kimbwera).
- Sw. ... Swahili. This being an urban language it is naturally poor in the names of natural objects and the bird names in use in the towns are commonly derived from the local tribe. The most compre-

hensive list of names I have seen with the title to be called Swahili that use in Zanzibar implies is one (unpublished) kindly communicated to me by R. H. W. Pakenham. In my list I have marked as Swahili only those names which occur also in his. To other names recorded by me from the Tanganyika coast and declared by the informant to be Swahili, I have appended the place of origin—Tan(ga), Pan(gani), Dsm. (Dar es Salaam), Kisiju or Kwale Island (off Kisiju).

There is great variation in the area over which individual bird names extend. A few, for example, *ninga* for the green pigeon, run throughout our area, from the Kenya border to Mafia Island. As a rule names change repeatedly: for instance the Tanga list, dominated by Swahili and Digo, has not much in common with the list at Muhesa, only twenty-five miles inland, but in Bondei country. More changes occur in the next few miles inland to the East Usambara plateau, and a higher proportion still as one passes to the West Usambaras. Actually the northern end of the East Usambaras has more affinity with the West than the southern end has. The intra-tribal variation in bird nomenclature tends to be even greater where it is a question of dialects so distinct as, in Uzigua, what may be called Ki-Handeni and Ki-Luvu, the latter being spoken near the Pangani River.

It is easy to collect quite a large number of native names. The fun comes when by checking and counter-checking one tries to verify the identifications; especially as some names cut across accepted classification although they may be found in the end to have a good natural basis. (For example, *chamwewe* K. = any white-bellied raptorial bird that takes chickens.) Naturally Africans differ much in their knowledge of the subject; the local and the individual differences reinforce one another; and years may go by before a perfectly "good" name once recorded is offered by another informant. It is often a matter of extraordinary difficulty to get a name for some particularly desired species, worst of all when the bird is known by sound and not by sight; for one is engaged in the plaguey business of trying to get two elusive organisms, the right man and the right bird, into juxtaposition when both are in the right frame of mind to "do their stuff".

A large proportion of the names are certainly allusive or descriptive and I have gone to a good deal of trouble to try to get interpretations through the medium of Swahili, for the only two tribal vocabularies to which I have had access have been of little help. The results have been encouraging, illuminating and of much interest. So far I have for about thirty per cent of the names interpretations that, in the light of my field-knowledge of the birds, I can see are appropriate; and fifteen per cent more of the names are at once recognizable as onomatopœic. Someone with as good a knowledge of the tribal languages as of the birds could double my percentage of interpretations. Not infrequently when I have been questioning an African without success about some name I have seen a flicker pass over his face that has convinced me he knew the

interpretation and that it was what is commonly called indecent. I trust that any one who succeeds in interpreting names left unresolved in my list will share the result of his researches with me. He might start with the Zigua name for the Crombec (*Sylvietta*).

It will be seen from the names given in the list that a favourite method of formation is to prefix a diminutive to a verb root, a substantive or an imitation of the bird's noise. The prefix "m-" is also often used, but frequently when one of these prefixes would seem most appropriate none is applied. Comparatively few names are formed by building upon a common component like the English "finch". It sometimes happens that one gets the same name for two very different birds. This is not always to be dismissed as due to a mistake; I have several times found that the name is justified in both cases by a common characteristic—for example, "*chemirunda*" refers to the long tail of the whydah and of the paradise flycatcher.

As I have shown elsewhere, onomatopœia bulks larger in African bird-nomenclature than in English. By no means all the onomatopes are, however, merely imitative jingles: some are rendered by a local phrase, such as "*songorokanturi*" W., "have-a-kinu-carved", and "*ngilikilajako*" K., the derisive cackle of a francolin, "warthog, your tail!" Onomatopes of these two classes are indicated in the list by "onom." or, where the imitation seems to me to be especially good, by "onom.+". Other birds bear onomatopœic names suggested by the nature of the noise they make (not always vocally), such as "the blacksmith" and "the trumpet". They may be more recondite than this, like "slay-brother" for a bird that goes always in parties and "talks" all the time in an excessively bad-tempered voice.

In general, as will be seen from the interpretations given in the vocabulary, the names very often give evidence of good observation and show an appropriateness that is at times witty. In phrasing the interpretations I have borne in mind that the African names have been conceived light-heartedly and colloquially; I have rejected as pedantic such orthodox renderings as "the crested one" and preferred "chap with a crest" or "him with the crest", which is illiterate but gets the spirit of the name.

The names are arranged in two lists, (A) an English/scientific-African and (B) an African-English/scientific. In preparing them for the printer my prime concern has been to get the maximum of information into the minimum of space. There I make certain demands on the user of the list.

(a) Certain prefixes, namely "ki-", "ka-", "chi-", "m-", "n-", constantly reappear and, with the same root, change from tribe to tribe and even from man to man. To index under all these variants clutters a list beyond bearing. Any name that begins with one of these prefixes should be stripped of it and, in list B, the name sought under the initial letter of its root.

(b) The letters "l" and "r" are, as a rule, indeterminate; for example, "*tolondo*" is encountered nearly as often as "*lorondo*". Only one of the

variants will be found in my lists, namely that which seems to me to have the wider currency.

(c) The tribal languages contain guttural and nasal sounds not allowed for in standard Swahili transliteration. For instance, the "*kwembe*" of the coast becomes something like "*nkhwembe*" in parts of Usambara. I have not catered for this refinement, recording merely as "*kwembe* Sw. Sb."

(d) Many Bondei names are lazy Sambia, for example, "*kizelele*" becomes "*kizee*", or differ in using "*s*" for "*sh*", as in "*sozi*" B. and "*shozi*" Sb. To save space I have telescoped these as "*kize(l)e(l)e* Sb.B.", "*s(h)ози* Sb.B."

(e) A similar device has been used for very close variants, often intra-tribal: thus, "*kumburu*", "*kumulu*" are recorded as "*kum(b)uru*"

(f) The word "little", which occurs so often in interpretations, is indicated only by its initial.

(g) List A, arranged alphabetically, consists of scientific (generic) names and of English names used in "The Birds of Kenya Colony and Uganda Protectorate" (Jackson and Selater, 1938), the African names being given under the English references. Specific names are as a rule not quoted, either because only one species of the genus occurs within the area or, where others do occur, because my African informants do not distinguish them.

POSTSCRIPT.—Since the above was written and my lists were compiled I have been able to study the new Standard English-Swahili and Swahili-English Dictionaries (Johnson, 1939). Over one hundred bird names are given there, a great advance on any previous dictionary, but it seems necessary to point out that there are some serious defects, for example:—

ENGLISH-SWAHILI VOLUME				SWAHILI-ENGLISH VOLUME	
Bulbul : teleka	...	...	...	teleka :	swallow
Canary : kirumbizi*	...	...	...	kirumbizi :	"bird like a goose"
Cormorant : mnandi	...	...	...	mnandi :	cormorant and yellow weaver-bird*
				mnana :	weaver-bird
Coucal : kwembe*	...	...	...	kwembe :	hornbill
„ hondo*	...	...	...	hondo :	„
Cuckoo : mlembe*	...	...	...	mlembe :	honey-bird
Gull : membe*	...	...	...	membe :	whimbrel
Oriole : kurumbizi*	...	...	...		
„ mlamba mweusi*	...	...	...	mlamba mweusi :	glossy starling
Shrike, Senegal bush, i.e.					
<i>Tchagra</i> : kipwe*	...	...	...	kipwe :	<i>Dryoscopus</i> (Puff-back).

Those alternatives which my information suffices to dispose of as incorrect are marked *.

LIST A

English/Scientific—African

- Accipiter minullus*, SPARROW-HAWK.
Accipiter melanoleucus, HAWKS (1).
Actitis, WADING BIRDS.
Actophilornis, RAILS.
Agapornis, LOVE-BIRD.
Alcedinae, KINGFISHERS.
Alseonax, FLYCATCHER.
Amauresthes, MANNIKIN.
Amblyospiza, GROSBEAK.
Anastomus, STORK, OPEN-BILL.
Anatidae, DUCKS.
Andropadus, BULBUL, SOMBRE.
Anhinga, not distinguished from CORMORANT.
Anthoscopus, CAPPOC-VOGEL.
Anthreptes, SUNBIRD.
Anthus, PIPIT.
Antichromus, TCHAGRA, BLACKCAP.
Apaloderma, TROGON.
Aplopelia, DOVE, LEMON.
Aquila, EAGLE.
Ardeidae, HERONS.
Apalis, WARBLERS.
Argya, CHATTERER.
Artisornis, WARBLERS.
Astur, GOSHAWK.
BABBLER, ARROW-MARKED, *Turdoides*.
(Kan-)Ghagha B. Sb., onom. + ; Rawa B., onom.
Zogoyogo K. ; Zogozogo Sb.
Balearica, CRANE.
BARBET, BLACK-COLLARED, *Lybius torquatus*.
Zuakulu Z. Dsm., onom.
BARBET, BROWN-BREASTED, *Lybius melanopterus*.
Lumi Z.
Langwi Sb.
BARBET, D'ARNAUD'S, *Trachyphonus d'arnaudii*.
Lolenzoka K., onom., "look at the snake."
Mhokeuta Z. Sb., onom. + , "draw the bow."
BARBET, GREEN, *Buccanodon olivaceum*.
Sisi Sb.
Pundwe K.

BARBET, LITTLE GREEN, *Viridibucco*.

Ninda Sb. Also as TINKER-BIRD.

BARBET, WHITE-EARED, *Buccanodon leucotis*.

Handa Sb.

Lumi Sb.

BATELEUR, *Terathopius*.

(M-)Pungu B. Sb. Zg. K.

Batis, FLYCATCHER, PUFF-BACK.

BEE-EATERS, Meropidae.

Especially the big species (*Merops*):—

Kiole W.; Kiuli, Mluli B.

Langazua K., "call-sun" (they are seasonal visitors).

Mbwererambwerera Dsm., onom.

Poropora Tan., onom.

Mpolohoyo Sb., Mloya D.

Especially the small species (*Melittophagus* and *Aerops*):—

Mchimbamchanga Sb., "dig-soil."

Kinega K. Z. Dsm.; Kamnega Z.

Bias, FLYCATCHER, BLACK-AND-WHITE.

BISHOP, FIRE-CROWNED, *Euplectes hordeacea*.

BISHOP, RED-CROWNED, *Euplectes nigroventris*. } In breeding plumage.

Nyamoto K., "fiery."

Kitambi Sb., "l. red dress" (*tambi* being the red garment worn in old custom by initiated Wa-sambaa).

Beleko ndogo Z.

Bombo Tan. Pan. D.

Kikoti Sb., "l. (European) coat" (the shape of the black plumage recalls a jacket).

Kibaya R. Kisiju, Kwale Is.

Gongo Z.; Gongwe B. Sb.

BISHOP, YELLOW, *Euplectes capensis*.

Gongwe koma B.

Kibasu K., "l. joined-together" (? because the bird has one sharply defined block of yellow inserted in otherwise black plumage).

BOUBOU, SHRIKE.

BROADBILL, *Smithornis*.

Kimbuwu Sb., onom. + ; Kimbulwe Sb.

Kishosoungula K., "l. cool-porridge."

Bandabanda Z.

Kijogooshamba Dsm., "l. country cock" (a *Smithornis* calling in the distance can be mistaken for a cock).

Bradornis, FLYCATCHER, BROWN.

Bradypterus cinnamomeus, WARBLERS.

Bradypterus usambarae, WARBLER, SCRUB.

Bubo, OWLS.

Bubulcus, EGRET, CATTLE.

Buccanodon, BARBET.

Bucorvus, HORNBILL, GROUND.

Budytes, WAGTAIL.

BULBUL family, Pycnonotidae.

(1) General, except GEELGAT, *q.v.*:—

Ko(l)ojoho B. Sb.

Taratazi Z.

(2) SOMBRE BULBUL, *Andropadus*.

Shoresore jangwa W.

Gorogonyiwa Tan., onom. +

Mulile R.

BUNTING, CABANIS', *Emberiza*.

Kibarabara Sb., "roadling."

Balamzila K., "sit in the road."

Buphagus, OXPECKER.

BUSTARD, Otidae.

1. Large species:—

Mguna K., "grunter."

2. Small species (*Lissotis*):—

Nkwaga K.

(N-)Tandawala B. Z.

BUZZARD, AUGUR, *Buteo*.

Kozi B. Sb.

Hama Sb.

Bycanistes, HORNBILL.

Camaroptera, WARBLERS.

CANARY, *Serinus* and *Spinus*.

Chiriku Sw.; Cheriko W. Z.; Tsiriku D.

(M-)(Ka-)Si(l)imiwa B. Sb. Z., onom.

Ndiyembili K., "picker up of two things (at once)."

CAPPOC-VOGEL, *Anthoscopus*.

Kisazile Z.

Caprimulgus, NIGHTJAR.

Centropus, COUCAL.

Cercococcyx, CUCKOO, LONG-TAILED.

Ceryle, KINGFISHER.

Ceuthmochares, COUCAL.

Charadrius, WADING BIRDS.

CHATTERER, RUFOUS, *Argya*.

Komandugu Sb., "slay-brother." (The birds are always in parties but have excessively bad-tempered voices.)

Dondolamswa K. "pick up termites."

Siafu B. [Not meaning "driver ant."]

Chulumbu Z.

CHESTNUT-WING (STARLINGS), *Onychognathus* spp.

Kwicho B. Sb., onom.

Muluho K., onom.

Chloropeta, FLYCATCHER, YELLOW.

Chlorophoneus, forest forms are not distinguished from SHRIKE, BOUBOU.

Chrysococcyx, CUCKOO, GOLDEN.*Cichladusa*, WARBLER, MORNING.*Ciconia*, STORK, WHITE.*Cinnyricinclus*, STARLING, VIOLET-BACKED.*Circaëtus*, HARRIER-EAGLE.*Cisticola*, WARBLER, GRASS.*Clamator*, CUCKOO, BLACK-AND-WHITE.CLIFF-CHAT, *Thamnolaea*.

Biyobiyo Sb., onom.

Chamabwe K., "him of the rocks."

Coccoxygia, WEAVERS (3).*Colius*, MOUSEBIRD.*Coliuspasser*, WHYDAH.*Columba*, PIGEON.*Coracias*, ROLLER.*Coracina*, CUCKOO-SHRIKE.

CORDON-BLEU, WEAVERS (3).

CORMORANT, *Phalacrocorax*.

(M-)(Ki-)Nandi D. Sw.

Horowe Pan.

(M-)(Lu-)Vuvi Z., "fisherman" (as for other fish-eaters).

Kilopo K. (as for other fish-eaters).

Corvus, CROW.*Corvultur*, RAVEN.*Corythornis*, KINGFISHER.*Cossypha*, ROBIN-CHAT.*Coturnix*, QUAIL.COUCAL, GREEN, *Ceuthmochares*.

Shemsana Sb.; Msani Z. "blacksmith."

Pondamakaa Kisiju, "grind-charcoal."

Mlangilambago K., "chatterer of the forest."

COUCAL, WHITE-BROWED, *Centropus*.

Tipitipi Sw. W.

Dudumizi B. Sb. Z. K. Tan. Dsm. (Krapf gives *dudumisa*="to push into something already full," but my information is that the verb means "to bubble.")

Samboni Z.

Mgulo Z.

Shundi B. Sb.; Shundishundi D.

Kijogoo Z., "l. cock" ("because it often calls at night especially if a cock has crowed").

CRANE, CROWNED, *Balearica*.

Ndege chai Tan. (Where known only from specimens kept in a compound open to the street. The local boys have named the birds after the picture on a packet of tea.)

CROMBEC, *Sylvietta*.

Kabumbu Z.

CRIMSON-WING, WEAVERS (2).

CROW, *Corvus*.

Kunguru Sw. B. Z. W. D.

Lukwangule K., "shaven chap."

Kingoroma Sb.

(There is a rather surprising degree of confusion with the RAVEN.)

Cryptospiza, WEAVERS (2).

CUCKOO, BLACK, *Cuculus clamosus*.

Ngechechangu K., onom., "bring my cooking-pot."

Totowi Sb., onom. +.

CUCKOO, BLACK-AND-WHITE, *Clamator*.

Langavura K., "call-rain" (especially noisy at the break of the rains).
Chuloha Z.

CUCKOO, DIDRIC, *Lampromorpha caprius*.

Pepe K., onom. (accent on last syllable).

Ngolankuchanje Z., onom. +, "knife for gashing."

CUCKOO, EMERALD, *Chrysococcyx*.

Kulwa (tuoge) K., onom. +.

Kulwa (tujage) Sb., onom. +.

Kwechea kanutwe Sb., onom.

CUCKOO, KLAAS'S, *Lampromorpha klaasi*.

Sayeikia B. Sb., onom. +, "famine is coming."

CUCKOO, LONG-TAILED, *Cercococcyx*.

Msowekolo K.

Sekikoko Sb. (This is also the name of a bad spirit, *sheitani*, especially troublesome to women. The bird, which calls from the forest canopy, often at night, is known only as a voice, not by sight.)

CUCKOO, RED-CHESTED, *Cuculus solitarius*.

S(h)e(m)koko Sb., onom.

Nechako K., onom. +.

Semchocho B., onom., "deluge chap" (thought to call especially in very heavy rain = *chocho*).

CUCKOO-SHRIKE, GREY, *Coracina*.

Msiwa K.

Cuculus, CUCKOO.

Cuncuma, FISH-EAGLE.

CURLEW, WADING BIRDS.

DARTER, not distinguished from CORMORANT.

Dicrurus, DRONGO.

DIOCH, WEAVERS (1).

Dioptrornis, FLYCATCHER, SLATY.

DOVES generally, Columbidae. (See also PIGEON).

Hua Sw. R. K.; Sua B. Sb. Z.

DOVE, LAUGHING, *Stigmatopelia*.

Songorokanturi W., onom. +; Sungurire katuri R.; Kasongolela katuri K., onom., "I. have-a-kinu-carved." (*Kinu* = the wooden mortar for pounding corn.)

DOVE, LEMON, *Aplopelia*.

Puguto Sb.

Kidusawarumbi K., "startle hunters" (because of its sudden rising from the forest floor).

DOVE, LONG-TAILED, *Oena*.

Kahuji mirunda Z., "I. dove with the tail."

DOVE, RED-EYED, *Streptopelia semitorquata*.

Sua (tutu) B. Sb. Z.; Hua tundu R., onom. +.

Hua fifi K.

Fumvu D., onom.

DOVE, RING-NECKED, *Streptopelia capicola*.

Hakimkulu Z., onom.

Hua koge R.

Tetere Sw. D. W. K., onom. +.

Njia kuruge D. onom.

DOVE, TAMBOURINE, *Tympanistria*.

Mpuji mbago Z., "dove of the forest."

Pugi kubo B., "BOUBOU dove" (the BOUBOU, *Laniarius ferrugineus*, having the same plumage pattern).

Pugi kikombe Sw., "cup dove" (from the pure white breast).

DOVE, WOOD- (GREENSPOT and BLUESPOT), *Turtur* spp.

(M-)Pugi, Sw. B. Sb.; (M-)(Ka-)Huji Z.; (M-)Hugi K.; Chiwuji D. Kitutu W. onom.

Dromas, PLOVER.

DRONGO, *Dicrurus*.

Mlamba, Sw. and all tribes.

Dryoscopus, SHRIKE, PUFFBACK.

DUCK, DOMESTIC.

Bata, Sw. and all tribes.

DUCK, WILD.

Wata B. Z.; Batavua Sb.

Zuvya Sb.

Bata kamari D.

Swarire W. (*Thalassornis*).

EAGLE, HAWKS.

EGRET, CATTLE, *Bubulcus*.

Yangeyange Sw. Sb. Z.

EGRET, LITTLE, *Egretta*.

Dandala Dsm.

Elanus, KITE.

Emberiza, BUNTING.

Estrilda, WEAVERS (3).

Euplectes, BISHOP.

Eurystomus, ROLLER, BROAD-BILLED.

FALCON, LANNER, *Falco*.

Ki(m)panga marumbi B. Sb., "curse hawk" (a special pest of fowls).

FINCHES, WEAVERS.

FISH-EAGLE, *Cuncuma*.

Kozi Tan.

Furukombe Sw.

FISH-EAGLE, VULTURINE, *Gypohierax*.

Kozi B.

Shempule Sb., "chap for pounded maize" (which the bird steals when it is put out to dry).

Bata mchikichi B., "(oil-)palm duck." (From the favourite food.)

FLYCATCHER, BLACK-AND-WHITE, *Bias*.

Bwan'yile K., "catcher."

Chapulukwa Z., onom. +.

Chekiuwa B., onom.

Mcherimiyo Tan.

Chokiro Sb., onom.

Chipiyo R., onom.

FLYCATCHER, BROWN.

Kambalazi Z., "l. pigeon-pea chap" (because the plant is a favourite perch).

FLYCATCHER, CRESTED, *Trochocercus*.

Kishungi Sb., "l. crest."

FLYCATCHER, PARADISE, *Tchitrea*.

(Lu-)Ndwi(n)dwi B. Z. ; Ngwegwe Sb., onom.

Chambombo W.

Nyalumbwizi K., "chap with the long tail."

Pumbwe Dsm. ; Fumbwe Z. }

Chemilunda Sb. }

(As for the long-tailed WHYDAHs).

Ndwela Tan.

Nye(l)ekessa Sb.

Ndege jinga Pan., "silly bird."

Kichakakore D.

FLYCATCHERS, PIGMY (*Alseonax*) and SLATY (*Dioptrornis*).

Chahanvumvu K., "catch fruit-flies."

FLYCATCHER, PUFFBACK, *Batis*.

Msilimbo K., "stripes."

Ndege mpunda R., "zebra bird."

Chemakoda Sb., "cracker" (from the bird's noise).

Kapurupunda Z., (*punda*=zebra).(In both R. and Z. names "*punda*" is understood to be used for the full "*punda milia*.")FLYCATCHER, YELLOW, *Chloropeta*.

Sonzo K.

FOWL, DOMESTIC.

General term :—

Kuku Sw. ; Nguku B. Sb. K.

Chicken :—

Kifaranga Sw.

Kiziya K.

Mwananguku B. Sb.

Cock :—

Jogoo Sw. ; Jogoro K. ; Zogoro B. Sb. Z.

Pullet not yet laying :—

Ntetea B. Sb. ; Mtetera Z. ; Mtetea Sw.

Mtembe K.

Laying hen :—

Koo (la kuku) Sw. ; Koro B. Sb. K. Z.

FRANCOLIN, BARE-THROATED, *Pternistes*.

Buwe Sb. Z. K.

FRANCOLIN, COQUI, *Francolinus coqui*.

Kimpelampele Z. K., onom.

FRANCOLIN, CRESTED, *Francolinus sephaena*.

Kwale kwechi R. ; kikwelekwechi B., onom. + .

Ngilikilajako K., onom. + , 'warthog your tail!'— an insult.

Kerengenje D.

FRANCOLINS in general (*Francolinus* spp.).

(N-)Kwale, all tribes.

(Species not fixed : Tegile Z. ; Wepe D. ; Wape K.)

Gallirex, LOURIE.

GEELGAT, *Pycnonotus*.

Shor(w)e Sw. R. ; Sore K. ; Chole B. Sb. Z. ; Kore D.

Shishungi W., 'cresty' ; Kichunju Tan.

Dwendwekuru K.

Kibwenzi Dsm., 'l. tuft.'

Glaucidium, OWL.

GOOSE, DOMESTIC.

Bata bukini Sw. ; 'Madagascar duck.'

Bata kanani K. (accent on 'ka-').

GOSHAWK, *Astur*.

Kizu W.

GREBE, LITTLE, *Poliiocephalus*.

Muhunzi W.

GROSBEAK (WEAVER), *Amblyospiza*.

S(h)emakhome B. Sb., 'him with the strainer' (an allusion to the fine weaving of the nest).

Kilambankosi Z., 'l. licker of the drinking cup.'

Shemfiyola Sb., 'whittler.'

Suwagulamilanzi K., 'strip-reed.'

GUINEA-FOWL, CRESTED, *Guttera*.

Kololo Sw. K. B. Sb.

Chele, Chelele Z.

GUINEA-FOWL, HELMET, *Numida*.

Kanga Sw. and all tribes.

GULL, *Larus*.

Shaki D. Pan. ; Shaku W.

Guttera, GUINEA-FOWL.

Gymnogenys, HARRIER-HAWK.

Hagedashia, IBIS.

HAMMERKOP, *Scopus*.

Mzing(w)i Sb. Z. K.

HARRIER-EAGLE, BANDED, *Circaetus fasciolatus*.

Kokoko Z., onom. + .

Kweo Sb.

HARRIER-HAWK, AFRICAN, *Gymnogenys*.

Kumbamti B. Sb. Zg., "grip-tree" (because when working at a hole in a trunk it clasps the tree with its wings).

Shekizeru Sb., "ashy chap" (colour).

Doholantalambo K., "open the banana screws" (to get out the roosting bats).

HAWK family, Falconidae.

In this difficult group many names are naturally not specific.

A general name in all tribes for all but the very big species is Panga, Lu(m)- or Ki(m)-. Big brown birds, especially WAHLBERG'S EAGLE are called Mbale Sb. and Mazangwe K.; chicken-snatchers with white underparts, whether *Hieraëtus* or *Accipiter (melanoleucus)* are lumped together as Chamwewe K.

More or less definite specific names exist for the following, *q.v.* :—

BATELEUR, BUZZARD, FALCON, FISH-EAGLE, GOSHAWK, HARRIER-EAGLE, HARRIER-HAWK, HAWK-EAGLE, KITE, SPARROW-HAWK.

HAWK-EAGLE, CROWNED, *Stephanoaëtus*.

Kumbakima Sb., "grip-monkey."

Kimakima Sb., "collect-monkey." (*Kukima* = "to pile up.")

Magengele K.

HAWK-EAGLE, MARTIAL, *Polemaëtus*.

Ngwi(l)izi B. Sb. Z.

Masumula Z.

Magubikila K., "smiter."

HAWK-EAGLE, LONG-CRESTED, *Lophaëtus*.

Se(l)uchungi (or ma-) B. Sb., "him with the crest."

Kunguru funefune Z.

Mbilili K., "long-haired."

HERONS, Ardeidae.

Nyombe Sb.; Nyonyombe Sb. Z.

(N-)Korongo Sw. Z.

(Lu-)Vuv(w)i Sb. Z., "fisherman."

Mrohwa K.

HERON, REEF, *Egretta*.

Mangera Pan. D.

Dandala Dsm. (Sw.).

Heterotrogon, TROGON.*Hieraëtus*, HAWK.*Hirundo*, SWALLOW.HONEY-GUIDE, *Indicator*.

S(h)egu B. Sb. Z.

Piegu Z.

Mlembe K., "honey-hunter."

HOOPOE, AFRICAN, *Upupa*.

Kijogoo mhuro K., l. cock of the woods."

Kazogolo mdente Z., "l. grasshopper-cock." ("Cock" because its comb is suggested by the HOOPOE's crest.)

HOOPOE, WOOD, *Phoeniculus* and *Rhinopomastus*.

Golegole W. (Sw.).

(N-)Gegeme(l)a B. Sb. R. Z. K.; Jojomera D.

Kinuka Tan., "l. stinker" (the bird does smell foul).

Machema Sb., "stench."

HORNBILL, GROUND, *Bucorvus*.

(M)bizi (wa nyika) B. Sb. Z.

Mumbi Dsm. K. (Pace Johnson, who gives Mumbi as "bittern (?)," but mentions that it "makes a noise like a drum"—a good description of the GROUND HORNBILL's call.)

Vumatiti D., onom. (*vuma*="roar").

HORNBILL, SILVERY-CHEEKED, *Bycanistes cristatus*.

Hondo(-hondo) B. Sb. Z.; mpondompondo K.

HORNBILL, small spp., *Lophoceros*.

(N-)Kwembe(-kwembe) B. Sb. Z. K. Sw.; Rukwembe D.

Luhoya K., "axe."

(Lu-)(N-)Kolomoko Z.

HORNBILL, TRUMPETER, *Bycanistes bucinator*.

Kiunga(l)i B. Sb., onom.

Worowondo D.

Hypargus, WEAVERS (2).

IBIS, HADADA, *Hagedashia*.

Kwarara Sw. W. R., onom.

Nyawawa K., onom.

Khako B. onom.

Haha Z. Sb., onom.

Indicator, HONEY-GUIDE.

Kaupifalco, HAWK.

KINGFISHER family, *Alcedinae*.

Species are not satisfactorily distinguished; the biggest, *Ceryle* and *Megaceryle*, tend to be classed with the other fish-eating freshwater birds as Vuvi, "fisherman," Sb. Z. and Kilopo K.

(M-)kum(b)ulu B. Sb. Z.

Sumbururu R.

Mdilila K.; Mtilili D.

Mdila Z.

Chororwe D.

Kichi W. (*Ceryle*).

KITE, BLACK, *Milvus*.

Mwewe Sw. and all tribes.

KITE, BLACK-SHOULDERED, *Elanus*.

Kinyamhuwi K., "l. hoverer."

Kipupwi Z., "l. whirlwind."

Kimbelelo Z.

Msoka B., "slacker" (? because it hangs about in one place in the air).

Lagonosticta, WEAVERS (2).

Lamprocolius, STARLING, GLOSSY.

Lampromorpha, CUCKOO.

Laniarius, SHRIKE, BOUBOU.

Lanius, SHRIKE.

LARK, FLAPPET, *Mirafra*.

Kambanda Z., "l. croucher."

Mposauji B., "cool-porridge."

Larus, GULL.

Lilytrotter, RAILS.

Limnocorax, RAIL.

Lissotis, BUSTARD.

Lophaëtus, HAWK-EAGLE.

Lophoceros, HORNBILL.

LOURIES, *Turacus* and *Gallirex*.

Huruvi B. Sb.

(N-)Kulukulu Z. R. K.

Khwemkhwe Sb.

Kitambi Sb., "l. red dress" (cf. BISHOP).

LOVE-BIRD, *Agapornis*.

Kasuku ndogo Tan., "l. parrot."

Lybius, BARBET.

MANNIKIN, BRONZE, *Spermestes cucullatus*.

MANNIKIN, RUFOUS-BACKED, *Spermestes nigriceps*.

(M-)Tongo B. Sb. Tan.; Tongwa Dsm.

Chigi W.; Siji D.

MANNIKIN, MAGPIE, *Spermestes fringilloides*.

Mtongo(m)zimba B. Sb. K.; M. simba Sw. (*simba*="fine fellow"—
the Magpie M. is much bigger than the Rufous-backed).

Megaceryle, KINGFISHER.

Melittophagus, BEE-EATER.

Melocichla, WARBLER, MOUSTACHE.

Merops, BEE-EATER.

Micropus, SWIFT.

Milvus, KITE.

Mirafra, LARK.

Motacilla, WAGTAIL.

MOUSEBIRD, *Colius*.

(M-)Pasa B. Sb. ; Pantsa D. ; Mpanja Z.

Nhuzukwa K.

K(h)umzumburu R. Dsm.

Nectarinia, SUNBIRD.*Neocossyphus*, THRUSH, ANT-.NICATOR, *Nicator*.

Nkologoto K., onom. +.

(Ndege) Lubozi R., "the loony" (because when the nest is approached it puts up an "injury-feigning" performance like a mad thing).

Babasi Sb. "simpleton."

NIGHTJAR, *Caprimulgus*.

Mkatasanda Sw., "cut-shroud" (a bird of ill omen).

Upapasa B., "groper (in the dark)."

Pweka D.

Tazo Sb.

Lumbaji, Mbaruwaji W.

Lugawa K. Z.

Lumbarwa B. Sb. ; (L-)U(m)bazu ; Umbazwa B. Sb. D., "ribs."

(The bird is very thin and light for its size.)

Lubatavua Z. (Not=Sb. Batavua, "duck.")

Numenius, WADING BIRDS.*Numida*, GUINEA-FOWL.*Oedicnemus*, STONE-CURLEW.*Oena*, DOVE, LONG-TAILED.*Onychognathus*, STARLING.ORIOLE, *Oriolus*.

Na-iwa B. Sb. onom. +.

(Kwem-)Kubwilu Z. K. Sb. D. onom.

OSTRICH, *Struthio*.

(M-)Buni Sw. K. ; Mbughuni B. Sb. Z.

Otis, BUSTARD.

OWL family. Divisible into :—

1. Very large birds (Eagle-owls, *Bubo* spp.) :—

Fufumbizi B. Sb. ("fufu," onom.).

Kokokwe K. ; Gugugu D. onom.

2. Medium-sized owls (*Strix*, i.e. *Ciccaba*, and Barn-owl, *Tyto*) :—

Kungwi B. Sb.

Vumburukuhu D. onom.

Babewatoto W., "father of children" (an honorific bestowed on a bird that is much feared as an evil influence on children).

Bundi Sw. Sb. K.

3. Small owls (*Glaucidium* and *Otus*):—

Kita umande W. (*G. capense*).

Kakungwi mabadule Z., "l. parson owl" (a Zigua transliteration of "padre").

Kungwi mlima Sb.

Kiduli Sb.

Kimbururu Sb.; Kimuru K.

Kilio K., (onom.; *Otus leucotis*).

Shematigili Sb., "bundle." (The bird resembles in shape the banana fibre *tigili* in which *kweme* nuts are packed.)

OXPECKER, *Buphagus*.

Shashe B. Sb.; Chassi Z.

Halia Z.; Cheria Z.

Sarai D.

PARROTS, Psittacidae.

Kasuku Tan. Dsm. K. (especially tame GREY PARROT).

(N-)Kwalu Dsm. B. Sb. K. Z.

Kwenzi D.

Passer, SPARROW.*Phalacrocorax*, CORMORANT.*Phoeniculus*, HOOPOE, WOOD-.

Picidae, WOODPECKERS.

PIGEON, BRONZE-NAPED, *Turturoena*.

Kombe(l)wa Sb.

PIGEON, DOMESTIC, *Columba*. (See also DOVES).

Sua manga Sb.; Njiwa manga B. Sb. Dsm., "pigeon from Muscat."

Ntsia D.

Ngunda W. K., "trumpet."

PIGEON, GREEN, *Vinago*.

Ninga, Sw. and all tribes.

PIGEON, OLIVE, *Columba arquatrix*.

Hua matembwe K., "pigeon with spots."

Kengewa Sb.

PIPIT, *Anthus*.

Kipimanjia Kisiju, "l. measure-path."

Kigendagenda D., "l. dawdler."

PLOVERS.

1. Large species, especially *Stephanibyx*:—

(Cha-)(M-)Doe B. Sb. Z. K. onom.

Chekoe D. onom.

2. Small species, especially *Charadrius*:—

Kitwitwi D., onom. (not distinguished from small Sandpipers).

3. Crab-plover:—

Ndo(e)roe W.

Pogoniulus, BARBET.

Poicephalus, PARROT.

Polemaëtus, HAWK-EAGLE.

Poliocephalus, GREBE.

Poliospiza, SEED-EATER.

Porphyrio, REED-HEN.

Prinia, WARBLER.

Psolidoprocne, SWALLOW.

Ptyonoprogne, SWALLOW.

Pycnonotus, BULBUL.

Pytilia, WEAVERS (2).

QUAIL, BUTTON, *Turnix*.

Kimuru B. Z., onom.

Kimpululu zeze K., "zeze quail," zeze being a stringed instrument with a note like the bird's.

QUAIL, COMMON, *Coturnix*.

Ki(m)pululu B. Sb. Z. K. R.

Matumandago Z., "peck *ndago*" (a *Cyperus* with fleshy root).

Kishengyenke Sb.

Kakwale buwo Sb.

Quelea, WEAVERS (1).

RAILS, Rallidae.

Fulindi B. Sb. Z.; (Se)Kilindi Sb., "swamplng."

Kibilinzi W.

Nkuluwili K.

Fuluwili Tan.

RAVEN, WHITE-NECKED, *Corvultur*.

Kunguru funefune B. (Not the same bird as so called in Z.)

Bondwa K.

Kunguru Sb.

REED-HENS, *Porphyrio* and *Porphyrola*.

Kibite W.

Lunyuya mazi Z., "rainbow of the water."

ROBIN-CHAT, *Cossypha* spp.

Kurumbiza Sw. B. Sb. Z.; Kirumbizi W.

Chemidanda Sb., "cunning fellow; imposter" (most appropriate for *C. natalensis*, a great mimic).

Chemalango B., "instructor" in a special sense, *malango* being the instructions given to initiation candidates; highly appropriate to

C. heuglini, which sings with much *empressement*.

ROLLER, *Coracias* spp.

K(w)ambu B. Sb.; Kwambo K.

Kwamba lugala Dsm.

Nyimbo Tan.

ROLLER, BROAD-BILLED, *Eurystomus*.

Jo(l)e B. Sb. K. Z. R. Sw.; Chole W., onom.

SANDPIPER, WADING BIRDS.

Saxicola, STONE-CHAT.

Scopus, HAMMERKOP.

SEED-EATER, STREAKY, *Poliospiza*.

Chiriku mghunda K. Sb., "canary of the fields."

Serinus, CANARY.

SHRIKE, BOUBOU, *Laniarius ferrugineus*.

Ku(m)bo B. Sb., onom.

Chopu Sb.

Mungo R., onom.

A-nini-a Tan., onom. + .

Nguonguo Z., onom., Nguo B.

Mbwigo K.

SHRIKE, BOUBOU, BLACK, *Laniarius funebris*.

Mkubwamkubwa Z., onom.

Kipulipuli K., onom.

SHRIKE, FISCAL, *Lanius collaris*.

Barabara Sb.

SHRIKE, RED-BILLED, *Sigmodus retzii*.

Bindandugu B., "band of brothers" (they are intensely gregarious birds).

Mazanamulungu B.; wanamlungu Sb., "sons of God" (they are birds on no account to be molested).

Niyanda Kisiju.

Bwabwabwa K., onom.

SHRIKE, RED-BACKED, *Lanius collurio*.

Kicheba (mpugi) B. Z.

Kisemba ulimi K., "l. thing that works through the cultivation."

SHRIKE, PUFF-BACK, *Dryoscopus*.

Kitibwa B. Sb. (The call is good omen to the wayfarer.)

Mkaribisha mgeni Tan., "welcomer of the stranger."

Gongofutu K., "back-swelling."

Kivuyu Z., "l. ruffled fellow."

Kipwe Sw.; Chipwe D., onom. + .

Kichujatui W., "l. strainer of coconut juice" (referring to the finely cut feathers on back).

Chiku W., onom.

Sigmodus, SHRIKE, RED-BILLED.

Smithornis, BROADBILL.

SPARROW-HAWK, *Accipiter*.

Msenga Sb., "slasher."

Kitema K., "l. slasher."

Kimpanga machinja B., "slaughter hawk."

SPARROW, HOUSE, *Passer*.

Bwana Hassani W.

Kitutia Kwale Is.

Shorwe wanda Dsm., "bird of the backyard."

Sphenorhynchus, STORK.STARLING, GLOSSY (*Lamprocolius* spp. and *Stilbopsar*).

Kizole B. Sb.

Kuzi W. D.

Nyangala K. Z.

STARLING, VIOLET-BACKED (*Cinnyricinclus*).

Nyanga(l)a B. Sb. K.

Stephanibyx, PLOVER.*Stephanoaëtus*, HAWK-EAGLE.*Sterna*, TERN, as GULL.*Stigmatopelia*, DOVE.*Stilbopsar*, STARLING, GLOSSY.STONECHAT, *Saxicola*.

Mhozo K.

STONE-CURLEW, *Oedicnemus*.

Ndununda K.

Dutura W.

Mchungu-nguruwe W., "pig-driver."

STORK, OPEN-BILLED, *Anastomus*.

Makoko; Makokya Sb.

STORK, WHITE (EUROPEAN), *Ciconia*.

Kuyu Z. Sb.

Luwi K.

(ABDIM'S STORK, *Sphenorhynchus*, also known locally as appearing only with locust swarms, bears the same names.)

Streptopelia, DOVE.*Strix*, OWL.*Struthio*, OSTRICH.

SUNBIRDS, Nectariniidae.

General:—(M-)(Ki-)(Ka-)S(h)ozi, B. Sb. Z.; Chozi Sw.; Kitozi W.;

Tsozi D.

Kihunguluwa K., "l. seek-flower."

Especially *Anthreptes collaris*:—

Tsiwitsiwi D., onom. +.

Especially RED-CHESTED SUNBIRD (*Chalcomitra*):—

Kinunerako K., "l. kiss-banana-flower."

Long-tailed sp., MALACHITE SUNBIRD (*Nectarinia*):—
Neruvuta Sb., "oily chap."

SWALLOW family, Hirundinidae.

(The species are not differentiated and there is naturally some confusion with the SWIFTS.)

Kize(1)e(1)e B. Sb. Z.

Sangalala K. R.

Mbaimbai; Mbayumbayu Sb. Z.

SWIFT family, Micropodidae.

Kiluwiluwi D.

Mbaimbai B. Sb. Z.

Mbawe W.

Bungo Sb.

Sylvietta, CROMBEC.

TCHAGRA, BLACKCAP (*Antichromus*).

Gongolafuno K., "duiker-back" (the bird's is the same colour as the antelope's).

TCHAGRA, BLACK-HEADED (*T. senegala*) and BROWN-HEADED (*T. australis*).

Kishunde mlima B. Sb. (Kishunde = "l. coucal" which the bird resembles in colour.)

Kishunde mabuwa Sb. (Mabuwa = "dead maize stalks.")

Tagilamkoko K., "lay (eggs) in dense thicket."

Sokelo Z., "tired fellow" (supposed to be caught easily if you chase him).

Towezo R.

Mwakijo Tan. (Sw.), D.

Tchitrea, FLYCATCHER, PARADISE.

Terathopius, BATELEUR.

TERN, *Sterna*, as GULL.

Thalassornis, DUCK.

Thamnolaea, CLIFF-CHAT.

THRUSH, ANT-, *Neocossyphus*.

Shesiafu Sb., "the lad for driver ants." (It does in fact eat them more than most birds.)

THRUSH, OLIVE AND KURRICHANE, *Turdus*.

Zwazwala K.

Mkesha Sb.

Donje digwa D.

TINKER-BIRD, *Pogoniulus*.

Kipekesamjiti W., "l. bore-tree."

Mshongogolo Sb.; Kikongogolo R.; Kamgongolo Z., "l. banger."

Ubungulukom K.

Trachyphonus, BARBET, D'ARNAUD'S.

Tringa, WADING BIRDS.

Trochocercus, FLYCATCHER, CRESTED.

TROGONS, *Apaloderma* and *Heterotrogon*.

Lukungu K. R.

Mwalabu Z., "the Arab" (because of its gorgeous raiment).

Rungwe B.

Turaco, LOURIE.

Turdoides, BABBler.

Turdus, THRUSH.

TURKEY.

Bata mzinga Sw., "cannon duck" (because of its explosive noises).

Turnix, QUAIL, BUTTON-

Turtur, DOVE.

TWIN-SPOT, WEAVERS (2).

Tympanistria, DOVE.

Tyto, OWL.

Upupa, HOOPoe.

Uraeginthus, WEAVERS (3).

Vinago, PIGEON.

Viridibucco, BARBET.

VULTURE family, Aegypiidae.

Ndeyi B.

Ngushu Sb.

Tai Tan.

Kilele K.

Motonyi Pan. (for some unexplained reason, a Masai name, = "bird").

WADING BIRDS.

1. Bigger species—CURLEW, GODWIT, WHIMBREL.
Membe Sw.

2. Small species—SANDPIPERS and PLOVERS.
Kitwitwi Sw., onom.

WAGTAIL, Motacillidae.

Kibikula K., "l. wagger." (*M. aguimp* distinguished as *K. nyasi* = "wagger of the thatch"; *M. clara* as *K. lamabwe* = "wagger of the stones.")

Ki(l)uwimazi B. Sb. (Mazi = "water.")

Kadima mbuzi Z., "l. goat herd"; Mdimi Z.; Mambuzi Sb.; refer especially to *Budytes*, YELLOW WAGTAILS.

WARBLERS in general.

Small birds, including species of *Bradypterus*, *Apalis*, *Artisornis*, *Prinia*:—

(M-)(Ka-)Kucha B. Sb. Z. R. K.

Kibwanzu K. (especially *Prinia*).

Chidosho D.

Kichwichiwi ; Twitwichi ; Chuchuwishi ; Mshuwishuwi Sb., onom. (all intended for "twitterers").

Kitwitwi B., onom. (used also for SANDPIPERS in Sw.).

WARBLERS, GRASS, *Cisticola* spp.

1. Small species (CLOUD-SCAPERS) :—

Kiduliduli K.

Kidenenda W. (*C. juncidis*).

2. Medium sized species :—

Mtupwi B., onom. + (*C. erythrops*).

Kizubi K., onom. (*C. erythrops*).

Mkucha Sb.

3. Large species :—

Kisimhe K.

WARBLER, MORNING, *Cichladusa*.

Topolamavi Z., "pick up dung," which it is said to incorporate in nest.
Pakulamavi K.

Kurumbiza B. Sb. (As for ROBIN-CHAT, *Cossypha*, which it resembles in having a chestnut tail and fine song.)

WARBLER, MOUSTACHE-, *Melocichla*.

Kuchakulu B., onom. + .

Kangaraja Z.

Zumbiru K.

WARBLER, SCRUB (*Bradypterus*).

Nzanza K.

WEAVER-BIRDS.

(1) Weavers of sparrowy colour, that associate in huge flocks, including *Quelea* spp. and out-of-plumage BISHOPS, WHYDAHs and WIDOW-BIRDS :—

Nta(r)a B. Sb.

(N-)Kuya Sb. Z. ; Nguya K.

Nkuya mzumiyo Z., "chorus weaver."

Kigoma msindo Z., "l. drum-roll". (from the sound of multitudinous wings).

Ntsongo umba D.

Nkwele Sb.

- (2) Very small birds with much red in plumage, including FIRE-FINCH, CRIMSON-WING :—

(M-)(Ki-)(Ka-)Tolondo B. Sb. Z. K. R.
 Kitolondo mzitu Sb. ("forest"), CRIMSON-WING.
 Katolondo mbago Z. ("bush"), *Pytilia*.
 Kitolondo kanga Sb. R. ("spots"), TWIN-SPOT.
 Bwelenda K.
 Kibwelengenhe K.
 Katolobwa Z. (especially FIRE-FINCH).

- (3) Very small birds with a little red, WAXBILLS (*Estrilda*, *Coccopygia*), CORDON-BLEU :—

(M-)(Ka-)(U-)S(h)igi B. Sb. D. Z.
 (Ki-)(U-)Sengeni D. K.
 Kimbuwi K.
 Kitonombe W.
 Katiyetiye Z. ; Kisiyesiye K. R., onom.
 Mswera Sb.

- (4) Miscellaneous very small birds, for example, INDIGO-BIRD, *Hypochera* :—

Chekicheya K.

- (5) Birds bigger than a sparrow with golden yellow in plumage, especially GOLDEN, SPECTACLED and SPOT-BACK WEAVERS (*Xanthophilus*, *Hyphantornis*, *Sitagra*) :—

Nofi B. Sb. Z. ; Nomvi Tan. Dsm.
 Ntsongo D.
 Mnana W. Tan. (Sw.).
 Kwera K. Bwejuu Is.
 Luzila Z., "a rush (*Cyperus*)" growing in damp places, such as are favoured by SPECTACLED WEAVER, to which name this especially refers.
 Selukungu Sb., "chap for *kweme* plant" (*Telfairea pedata*), because the bird builds its nest with stout corkscrew tendrils typically developed by this climbing plant.

- (6) Other weavers well distinguished are GROSBEAK, MANNIKIN, WHYDAH, WIDOW-BIRD, *q.v.*

WHIMBREL, WADING BIRDS.

WHITE-EYE, *Zosterops*.

Kinengenenge K.
 Tiyetiye Sb., onom. + .
 Kayelo Z.

WHYDAH, CUT-THROAT, *Coliuspasser ardens*.

WHYDAH, PIN-TAILED, *Vidua*.

(M-)Fumbwe Tan. Dsm. D. Z. Sb. K.

Chemilunda (ntaa) B. Sb. Z., "him with the tail (weaver)," the addition being to distinguish the bird from the long-tailed (PARADISE) FLYCATCHER.

Nyancheche W.

Babewatoto B., "master of the household (*harim*)" (*cf.* OWL).

Lufite Z., "thin building pole."

WIDOW-BIRD, FAN-TAILED, *Urobrachya*.

Beleko Z. Sb.

Bawa W.

WOODPECKER family, Picidae.

(N-)Kong'o(n)ta Sw. B. Sb.; Kokota D.; Ngongondo K. R., "knocker."

Mgule Sb.

Msuhi Z., onom. (SPOTTED WOODPECKER, *Campethera cailliautii*, whose call is a good omen.)

Zosterops, WHITE-EYE.

Locating and Proving an Underground Source of Water Supply

By A. J. Mitchell

UNDERGROUND water is usually regarded with a certain degree of mystery. In ancient times springs were often given a religious significance and temples were built on their sites. To-day our Law Courts still profess to regard underground water as "Moving in a mysterious manner in channels undefined and unknowable." Some wonderful works for the utilization of underground water were constructed in the past, such as wells nearly a mile deep in China and underground aqueducts up to a hundred miles long in Persia and Egypt, but it was not until the close of the seventeenth century that the fundamental laws governing the origin and movement of underground water began to be correctly appreciated. During the eighteenth century this knowledge was verified and extended by the efforts of engineers, geologists and other investigators (chiefly in France and Germany) but it is in recent years that the most remarkable progress has been made. It is to the United States of America that we are chiefly indebted for what may be called the establishment of Ground Water Hydrology as a branch of exact science, largely owing to the field and laboratory studies carried out by the water supply section of the United States Geological Survey. The names of Hazen, Meinzer and Slichter are landmarks in this period of rapid progress.

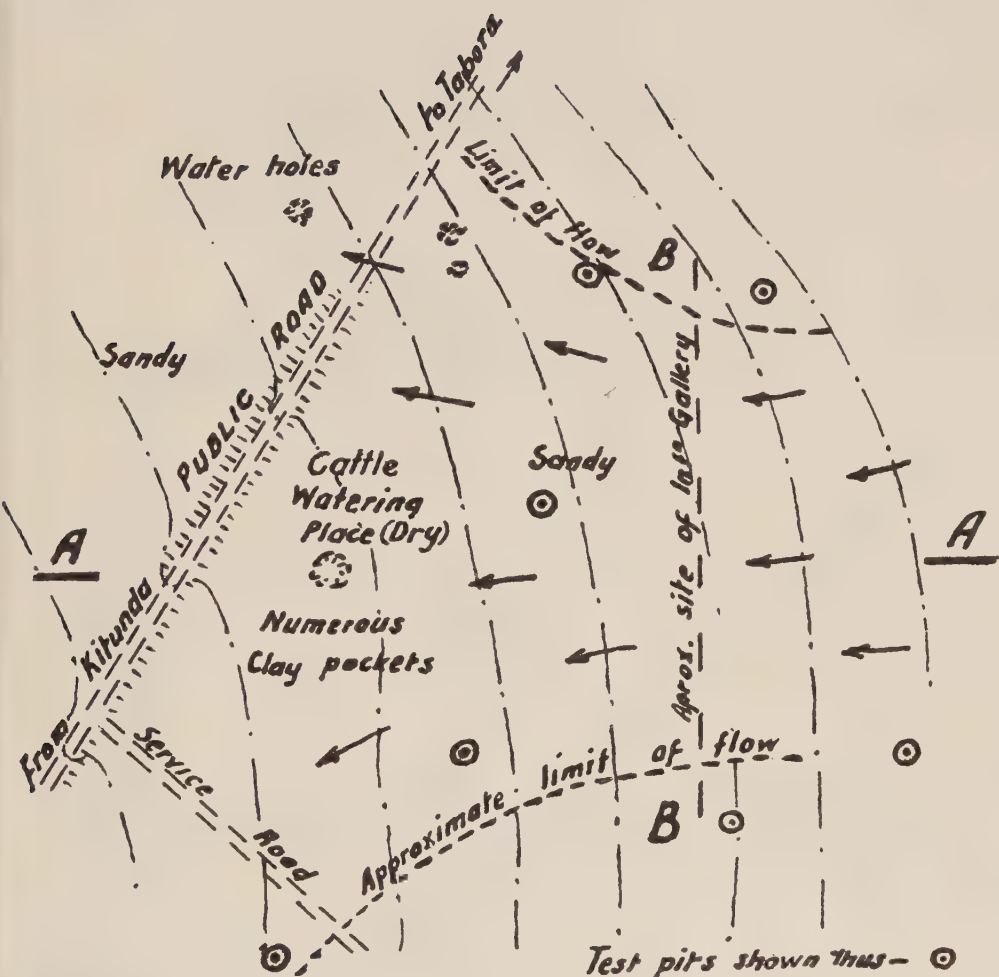
In the United Kingdom and other countries having an adequate and well distributed rainfall causing frequent perennial rivers, springs and shallow ground water supplies, the interest taken in the science of Ground Water Hydrology is comparatively small, and the normal source of water supply in these countries is from springs, lakes, rivers or shallow wells. Where these are not available or are inadequate to supply the larger centres of population, their requirements are met by the creation of artificial lakes or reservoirs, or by tapping more deep-seated sources of ground water. In more arid countries like the Western States of America (and the greater part of Tanganyika Territory) perennial surface supplies are infrequent and underground water is of the greatest importance. In Tanganyika, only the sparsity of population and the absence of large concentrations have prevented this problem from becoming acute.

The rocks yielding the most frequent and copious water supplies, such as the more coarse-grained deposits of the Permian and subsequent geological formations, are not developed to any great extent in Tanganyika, and although many useful supplies of moderate quantity have been provided by deep drilling, principally through Government enterprise, conditions generally cannot be said to be favourable for this type of supply. The greater part of the Territory

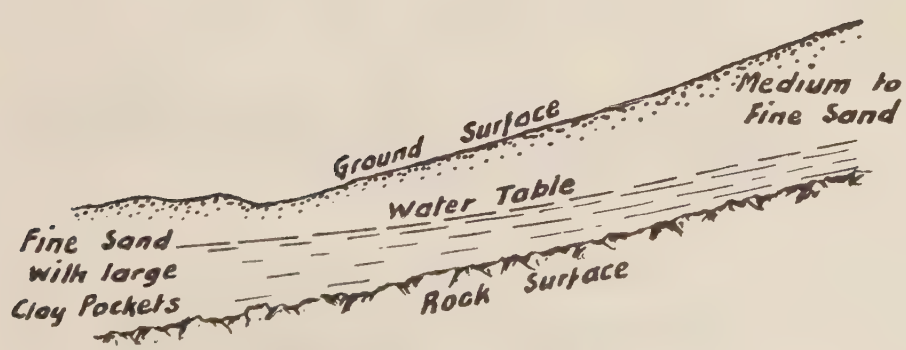
is underlain by granitic or schistose rocks where any ground water available is contained in fractures or fissures within a few hundred feet of the surface and copious supplies are rare. In these circumstances a number of useful—although limited—supplies have been obtained from the comparatively shallow layer of sands, gravels and clays overlying the rock. The development of such supplies forms an interesting application of the principles of Ground Water Hydrology, although on a small scale, and for this reason it is thought that the following description of the methods adopted of proving and developing a source of supply of this type at Tabora, Tanganyika Territory, may be of interest.

Tabora is a town of some eleven thousand five hundred inhabitants, situated about the centre of the western half of Tanganyika Territory, at longitude thirty-three degrees east of Greenwich, and latitude five degrees south of the equator. It is a centre of administrative, educational and railway activities. The average rainfall is about thirty-two inches per annum, nearly all precipitated during a rainy season which normally extends from November to April. The underlying rock formation is granite, and granite rocks and mica schists extend over a large area round the town, reaching as far as Lake Victoria in the north. Superficial deposits and soils are generally thin and vary in character from coarse sands to black clays, with local formations of laterite. Surface water flows in this region last little longer than the rainfall causing them, and supplies of water for human use are almost invariably obtained from underground. Conditions generally are unfavourable for the collection and storage of water in surface reservoirs owing to the high rate of surface evaporation during the dry season, the frequent deep fissuring of the granite and the generally unsuitable topography.

The water required for the Railway workshops and depots in Tabora is obtained from deep boreholes sunk in the granite along a zone which has been subjected to considerable shattering and fissuring. A number of private wells in the township yield moderate supplies, but most of these are liable to run dry towards the end of the dry season. The greater part of the township requirements is met from the supply maintained by the Public Works Department, which, until recently, was pumped from a series of shallow wells sunk near the head of a small valley within the township boundaries. Owing to the relatively small catchment area, the yield from this source is small and subject to considerable seasonal fluctuation. At the end of the dry season it is often insufficient to meet the calls upon it, and restrictions on the use of water from the piped supply have had to be imposed on several occasions owing to this shortage. The position, moreover, has been aggravated by progressive vertical erosion of natural and artificial surface drainage channels in the catchment area, which, in some places had reached the underlying rock, causing a corresponding depression of the water table and a decrease of the temporary storage. This tendency has been arrested by the construction of a number of check dams or weirs, but it seems unlikely that any such improvement could

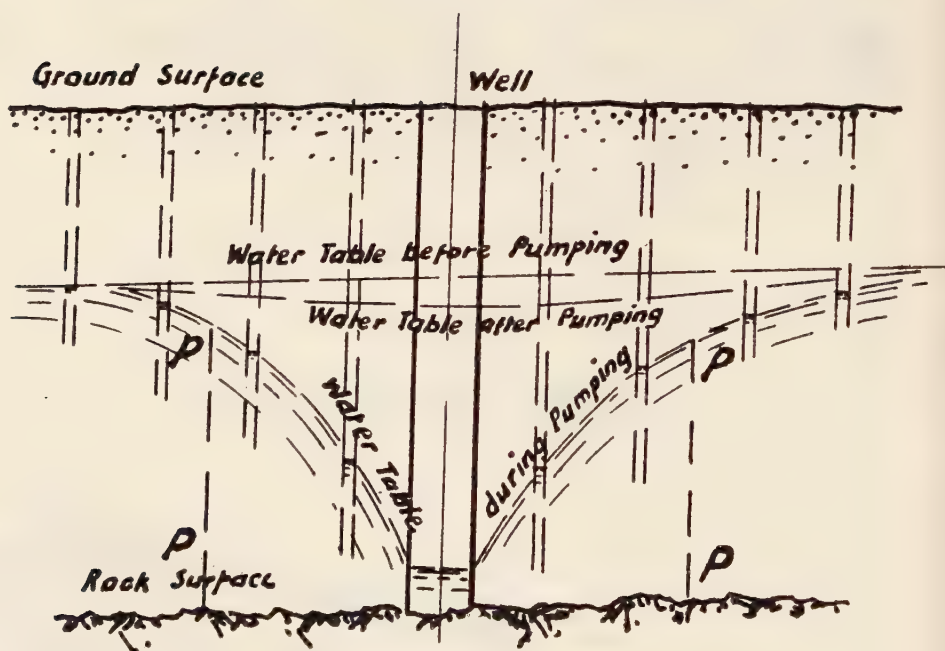
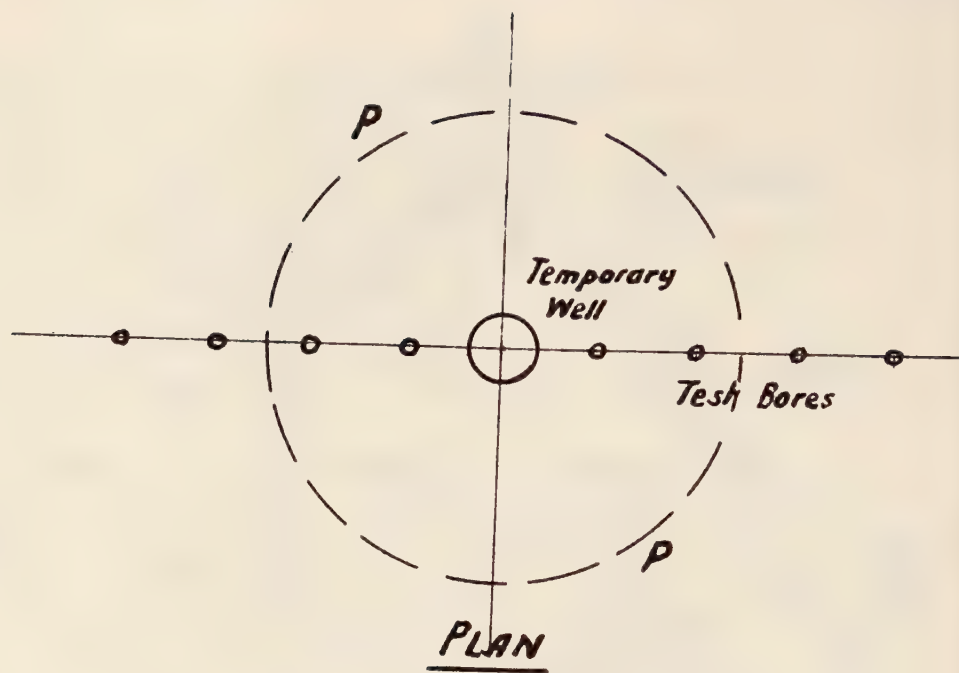


SKETCH PLAN OF SITE.



SECTION ON AA.

FIG. 1:



SKETCH PLAN & SECTION
TO ILLUSTRATE PERMEABILITY TEST

FIG. 2.

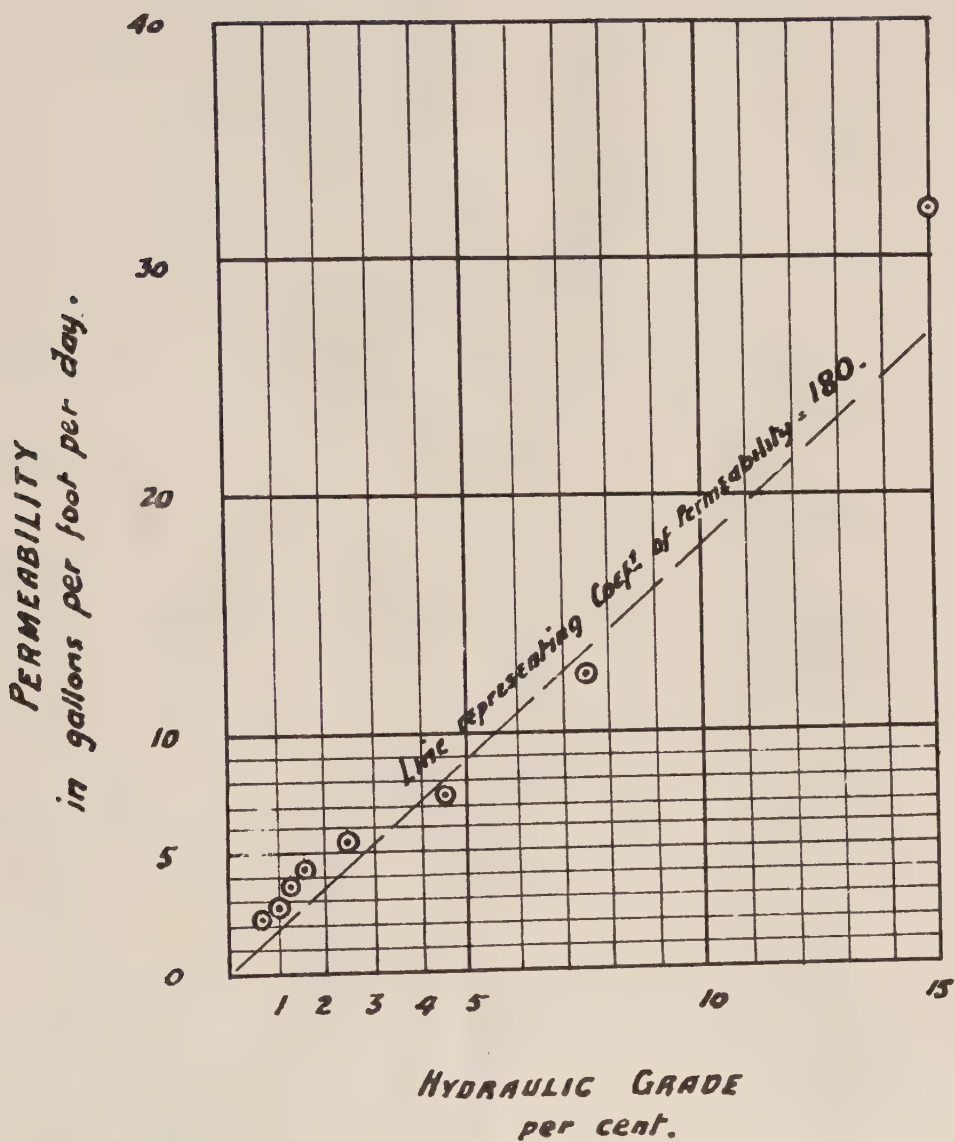
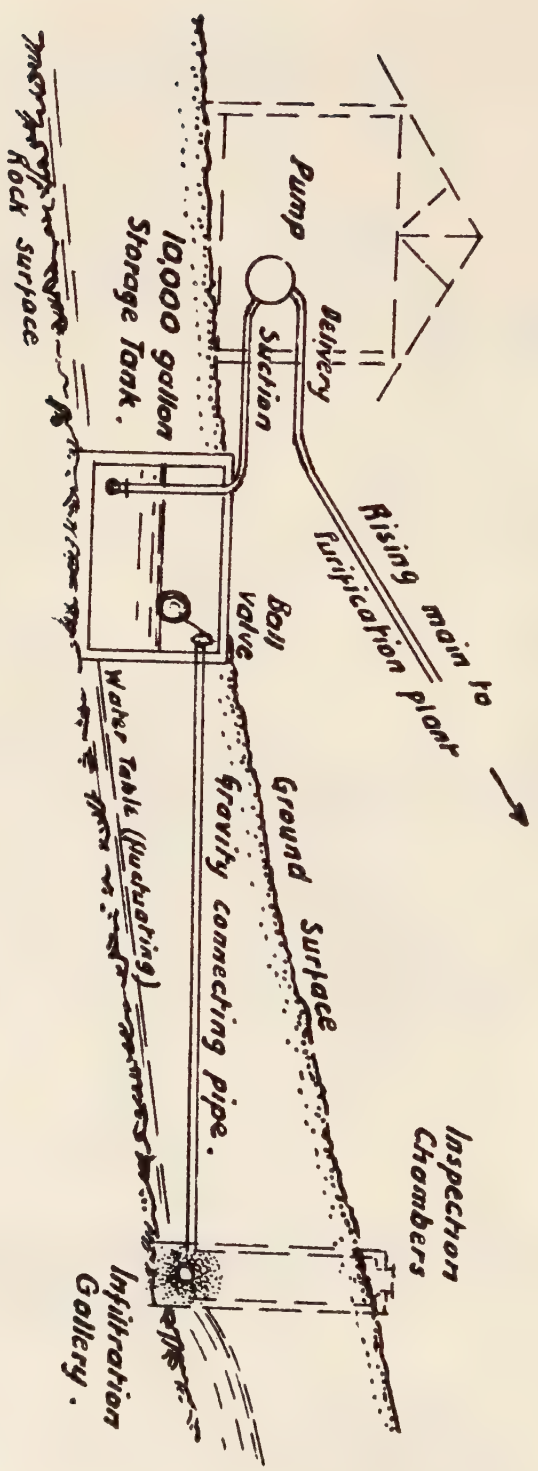


DIAGRAM SHOWING RESULTS
OF PERMEABILITY TEST.



DIAGRAMMATIC SECTION
SHOWING GALLERY, TANK AND PUMP.

FIG. 4.

render this source adequate to meet township requirements. In addition to this, its position renders it liable to the danger of human pollution.

In consequence, various attempts have been made in the past to discover a more satisfactory source of supply, one of the most recent being a borehole sunk in the granite to a depth of about four hundred feet. This, however, proved unsuccessful and in 1934 the writer made a reconnaissance of the neighbourhood, not so much with the object of succeeding where others had failed, but in the hope of finding a source of sufficient size to be developed as an auxiliary or stand-by supply to supplement the present source in time of shortage. This, naturally, created the further difficulty that a separate pumping installation would be necessary, and, to avoid excessive operating costs, it was essential that the location of the new source was such that the same purification plant and storage tank would serve for the water from it and from the former source.

After several sites had been inspected which gave indications of possible supplies, one site about a mile south of the centre of the township and south of Kazeh Hill was selected for further examination, and a number of trial excavations sunk to the underlying rock, work being carried out at the end of the dry season when the water table could reasonably be expected to be at its lowest. Fig. 1 shows the general hydrological conditions of the site indicating the presence of a flow of water some two or three hundred yards wide and a few feet deep over the surface of the underlying granite. Examination of certain old waterholes, vegetation and other local conditions suggested that this flow would be perennial. Before deciding whether this source could be economically developed for the purposes required, further investigations were necessary, with the specific objects of determining the probable minimum yield and of estimating the approximate cost of the works required for its utilization.

These investigations were carried out by the Public Works Department between the months of November 1934 and January 1935 and may be considered under two heads. The first comprised the sinking of further trial holes to rock, their accurate survey, and recording on a plan showing the topography of the ground surface, the water table and the surface of the underlying rock as well as the nature of the capping sands and clays. From this plan the approximate cross-sectional area of the underground flow of water was ascertained, as well as its direction of movement and general hydraulic gradient. The object of the second line of investigation, was to ascertain the rate at which this water was moving and at which it could be collected. An approximate estimation of this was first made by the use of empirical permeability formulae, permeability being a term used to express the rate at which a liquid can pass through a granular material under certain conditions of head, temperature, etc. The permeability of any given material is related to a quantity known as its co-efficient and permeability which, in water supply practice, is usually taken to be the amount of water in gallons

per day which will pass through each square foot of cross section under a hydraulic gradient of a hundred per cent. As the actual velocity of flow has been proved to be substantially proportional to the hydraulic gradient, the permeability at various gradients can readily be calculated when the co-efficient of permeability of the material in question is known.

A mechanical analysis of a representative sample of the sandy material at the selected site was made, by weighing the amounts retained in a succession of test screens. This gave an effective grain size of 0.1 millimetre. The effective size is that size of grain than which ninety per cent of the material is larger and ten per cent smaller, and this measure is used as it has been found in general that granular materials of similar effective size have similar permeability. Applying Hazen's well-known formula gave a permeability value of about two hundred and fifty gallons of water per day per square foot. This result could only be regarded as approximate, and it was considered wise to supplement it by a more direct determination of the permeability of the material *in situ*. For this purpose a small temporary well was constructed in representative sandy strata and water pumped from it at a steady rate while careful measurements were taken of the level of the water table in the vicinity of the well—before, during and after pumping—by taking soundings in a number of test bores at different distances from the well. The manner of determining the permeability by this method can best be explained by reference to the diagrams in Fig. 2. The amount of water moving towards the well past any circumferential section such as that marked PP in Fig. 2 may be considered as equal to the amount extracted from the well by pumping. The area of such sections being known, the rate of flow past each section may readily be determined, while the hydraulic gradients are, of course, equal to the actual slope of the water table. This was carried out for various sections at different distances from the well and the results plotted on the chart shown in Fig. 3. This test gave an average value of the co-efficient of permeability of about one hundred and eighty gallons per day per square foot.

Applying the information thus obtained for the purpose of ascertaining the water available, a cross section was selected where the underground stream appeared to be narrowest, that is, at BB on Fig. 1. The cross sectional area enclosed between the water table and the rock surface at this section was found to be approximately two thousand square feet. The average hydraulic gradient was two and a half per cent, which applied to the co-efficient of permeability ascertained by test, gave a flow of $180 \times 2\frac{1}{2} \% \times 2,000 = 9,000$ gallons per day as passing the section in question. It was considered that this quantity should be considered as a minimum rather than a maximum, and would probably be exceeded owing to a parallel flow of water in fissures in the underlying rock, chiefly in the area of weathering near its surface. This opinion was supported by the form of the chart in Fig. 3, the apparent higher proportional experimental values of permeability near the well being no doubt due to this parallel flow in the rock fissures.

The consumption from the township supply of Tabora varied between fifteen thousand and twenty thousand gallons of water per day, and as the minimum yield from the existing source was in the neighbourhood of ten thousand gallons per day it was considered that the new source would prove a most useful alternative supply, which used with the old source would probably meet all township requirements for some years to come. As the estimated cost of harnessing the new source was found to be relatively small, it was decided to proceed with the work as part of a programme already approved, which also included the provision of a purification plant and the re-laying of part of the distribution piping.

The works for the collection and utilization of the water from the source described, consisted essentially of an infiltration or collecting gallery constructed across the main underground flow, an underground storage tank, a pump and a rising main. A diagrammatic sketch of these elements is given in Fig. 4, which shows their relative levels. The infiltration gallery was constructed of second-hand perforated borehole strainers five inches in diameter, laid on the surface of the rock which was cut away as necessary to form an even surface. These strainers were surrounded with graded stone packing before the excavated material was re-filled. The gallery, as completed, is about seven hundred feet long and nine feet deep with five concrete manholes for inspection and cleaning, provided with penstocks for isolating any portion of the gallery if desired. The siting of this gallery entailed careful examination of the sub-soil, as numerous clay pockets were found which had to be avoided, while the fineness of the sand increased the practical difficulties of construction.

Water collected in the infiltration gallery is gravitated through a short length of piping to a circular underground storage tank of ten thousand gallons capacity. This tank is at a lower level than the infiltration gallery and its inlet is controlled by a ball valve. By this means water may be extracted from the gallery continuously over the twenty-four hours of the day while the pump may be operated at convenient periods. It is believed that this economical type of tank with its horizontal steel re-inforcement set in the cement mortar between pre-cast concrete blocks, and mushroom flat roof slab is probably the first of its type in this Territory. Its construction was facilitated and its cost reduced by locating it on one of the clay pockets which had proved so troublesome from the point of view of siting the infiltration gallery. Both pumping and shuttering were thus reduced to a minimum.

The pumping unit was a vertical, triple-ram, reciprocating pump driven through gearing and clutch by a vertical, single-cylinder oil engine of the Diesel type, both supplied by Messrs Tangyes, Ltd. The pump is capable of delivering water at a rate of about two thousand five hundred gallons per hour through some three thousand six hundred lineal feet of three inch diameter pumping main to the purification plant situated on the top of an eminence overlooking the town. The rising main from the old source also delivers to the purification plant at the same rate, so that either or both sources can be utilized as required. The principal reason for installing the purification plant

was to reduce the high turbidity of the water, due chiefly to finely divided silicious matter which cannot be removed by plain sedimentation. Clarification is effected by the addition of sulphate of alumina followed first by turbulent mixing, then by a period of gentle agitation in open channels where the process of flocculation can be seen and controlled, then sedimentation in hopper-bottomed reinforced concrete tanks and finally filtration, after which the water passes to the clear-water storage tanks from which it gravitates through the distribution system to consumers.

The work described above was carried out in 1935 and 1936 and the approximate cost of the works for the development of the new source of supply is as follows :—

	£
Preliminary tests	75
Infiltration gallery and collecting tank	600
Pumping installation and rising main	887

After the work had been completed and tested, it was found that under normal conditions the new source was able to supply all township requirements, which, consequent on the installation of the purification plant reached a figure of about thirty thousand gallons per day. As the quality of the water was superior to that from the old source, and the pumping unit more economical in operation, the new source has been adopted as the main supply and the former source reserved as a stand-by in case of shortage. From experience to date it appears that the minimum capacity of the new source is between fifteen thousand and twenty thousand gallons per day, which minimum is only reached with years of less than normal rainfall.

It is of interest to note that the capital expenditure on the construction of the infiltration gallery and collecting tank represents an annual charge on account of interest and depreciation on a normal basis of about £65. On the stated figures of minimum yield this works out at eighteen to twenty-four cents per thousand gallons of water available from the gallery. This cost, which does not include pumping costs, appears to bring this type of supply within the reach even of the smaller communities and it seems worthy of extended application where conditions are suitable.

While it is advisable to obtain expert advice before embarking on works of this nature to avoid the possibility of failure, it is hoped that the foregoing notes may be of some use to those having similar problems and that although they only treat of one aspect of the development of water supplies in this Territory, they may quicken public interest in this most important national asset.

Notes on Saucer and Bowl Decorations on Houses, Mosques and Tombs

By Arthur E. Robinson, F.R.A.N.T.H.I.

PART 1

THE purpose of these notes is to draw attention to a curious custom which seems to have developed within the Moslem peoples in different parts of the world, during a comparatively recent period. The origin of the custom seems to be obscure. It is not at present clear as to whether the practice is the result of a later and more superstitious interpretation of what may have been a peculiar form of art, or whether it is a form of charm based upon its apparent similarity to a revered relic. A sympathetic research locally on the subjects is desirable.

In recent years travellers in Upper Egypt, East Africa and the East have described a practice of affixing earthenware plates, saucers or bowls in the walls above the doors of houses, mosques, tombs, etc.

UPPER EGYPT

When I travelled up the Nile to Khartoum with my wife in 1908 we noticed that a number of Egyptian mud houses had a white common earthenware plate inserted into the outer wall above the door. As a general rule there are no back doors or entrances to these houses. We made inquiries regarding this curious form of decoration both of a direct and indirect character. I did not remember having seen anything like it in the Delta at that time and was much interested. My Sudanese servant confirmed the information given to us that these decorations were merely ornamental (*fantasia*). Similar explanations were given to us in respect to the practice of ornamenting the roofs of mud houses with low walls with patterns suggestive of those characteristic of ancient Egyptian buildings. At Wadi-Halfa one of the better type of farmhouses seemed to be a replica of one of the models in the Cairo Museum, which we had seen a few days previously. This house had an earthenware plate over the door into the forecourt and there were no outside windows. I thought then that these plates over the doorways were protective objects, similar to the horse-shoes in England but that the Moslem owners of the houses would not admit the fact. It is significant that upon the wall of a house on Elephantine Island we saw a crude drawing of a cat in addition to the plate over the door. We were somewhat shamefacedly told by one of the occupants that the drawing was to frighten the mice or rats away. At that time rodents were very destructive to growing or dried crops as the Nile was high. Representations of a cat's head (with glass eyes) are in common use in gardens in England to scare birds and mice from seedlings.

Since then these decorations have attracted the notice of others⁽¹⁾. As far as Upper Egypt is concerned the practice seems to be modern. I cannot trace it mentioned by E. W. Lane*. It is probably a sign of the increasing prosperity of the fellahin who are better housed than ever they were before. It has been suggested that this plate or bowl decoration is a survival of an early Christian practice. I cannot trace any historical evidence to support such a theory. Circular decorations are common on European medieval buildings. The use of the halo (a sun-disc) by Christians apparently dates from the ninth century and the quadruple disc sign of the Trinity (with Latin motto) used in heraldry is most unlikely to have been adopted for public use in Upper Egypt where the Copts were treated as a class apart and much oppressed. It is impossible to compare their conditions with those of the Christians of Dongola or Soba (the capital of Alwa) on the Blue Nile. From recent excavations at the site of the ruined palace of the Damascus caliph Hisham in the Jordan valley it is clear that during his rule (A.D. 724-743) the rigid prohibitions exercised later by Moslems against images or paintings of human beings were not in force. Busts, statues of girls, etc., of typically Greco-Roman character have been found. As far as we know the Christians had not adopted the use of statues then⁽²⁾. Some of the reputed "phallic" columns (similar to those found in Sinai) have been identified by Dr Baranki as the chancel-posts from early Christian churches or copied from them. These sites in Sinai are of Byzantine ruined and abandoned towns visited by Lawrence and Woolley.

At the present time charms, protective objects, or lucky tokens are more commonly in use in Europe than ever they were before. In Egypt the fashion has not altered much for many centuries. Blue beads (similar to those found in Bronze Age burials in Wiltshire), brass crescents or discs are seen frequently suspended from the necks of animals for protective purposes. Cowries are very much in vogue as signs of wealth and also among a certain class as indicative of phases of a fertility cult. I never saw a representation of the "swastika" or the

*1835.

⁽¹⁾ Professor Griffiths in *Man*, May, 1938 (No. 68), and *S.N.R.*, vol. xxi, part 1, page 217; Mary Williams in *Man*, September, 1938. Mr James Hornell who has travelled extensively in the East Indies has noticed these plate decorations in some of the islands in the Indian Ocean.

NOTE.—As the result of twenty years' residence and travel in Moslem countries whilst engaged in commerce or as a government official I have found that information given by illiterate Moslems and the views expressed by persons of other religions upon subjects such as these are not always reliable. Dr Zwemer's book ("The Influence of Animism on Islam") is based upon lectures given to American missionary students. I cannot identify myself with some of his views. Dr Westermarck has chosen a more suitable title for his book, namely, "Pagan survivals in Mohammedan civilization." I cannot trace any mention of the "plate" cult in Dr Zwemer's book or Lane's "Manners and Customs of the Modern Egyptians" (Dent's Edition).

⁽²⁾ Dr V. Baranki, pages 407-9, *Illustrated London News*, 3rd September 1938.

The four-pointed and rayed-star within a circle would appear to have been a royal sign in the time of Nebuchadnezzar 1 (circ. 1120 B.C.) as a boundary stone is illustrated in the British Museum Guide inscribed with this symbol (Babylonian and Assyrian, Antiquities, plate xi).

Circular wall decorations on the walls of the mosque of Al Azhar (Cairo) are illustrated by Dr Zwemer (*op. cit.*, plate facing page 50). One of these decorations above the old sun-dial seems to be of the sun-rayed type. The inscriptions are too indistinct in the illustration for me to read.

interwoven cruciform "Hausa link" worn in Egypt, although these designs are common on ancient Asiatic pottery and are found in Roman Palestinian mosaic pavements as part of the designs. Brass stampings of hands are common and are generally recognized as protections against the "Evil Eye". Hands are shown on the tips of the Nubian cattle figured at Thebes during the time of Rameses II⁽³⁾; and are common in many prehistoric caves, etc.

Many of these magical objects are of ancient religious origin and may be survivals of sun-worship in districts where it was formerly practised. From a Meroitic drawing at Jebel Geili it would appear that at a later period sun-worship was common there—prior to the Axumite invasion⁽⁴⁾. As one of the results of the Crusades many of these ancient pagan religious symbols were introduced into England and were adopted as badges on shields, etc., in feudal times. They were incorporated into armorial bearings as crests. They were made by a special London guild, the Lorimers, which was not actually incorporated until the reign of Henry VII. These badges survived as ornaments on the bridles and harness of horses until motor transport replaced horses⁽⁵⁾. They were not charms against the "evil eye" originally. Since Lane advanced his theory that cowries, discs, beads, crescents, etc., were intended to direct or distract the "evil eye" from the wearer of a protective object, considerable research has taken place. The views of various classes of experts vary considerably*. As far as Egypt is concerned the practice of carrying standards of a religious character dates back to an early period. This practice was still continued by the armies of the Abyssinians until recent times. In the early battles of the Moslems extracts or copies of the Quran were carried on lance-heads†. It seems to me impossible to adopt any hard and fast general rule regarding protective objects or charms‡. A German authority has suggested that the revival of phallism in late Roman times (rings, etc.), was the result of a revival of sympathetic magic. It was due to the sterility of the people caused by the universal use of lead for tanks, vessels and pipes for water. The value of most magical objects and ceremonies and also their purpose entirely depends upon what result the petitioner, wearer or user expects from the methods

*Extracts from the Bible and the Ten Commandments are common inscriptions in Christian churches, and so are gargoyles.

†The conservation of regimental colours in our army is a survival of the sacred character of the standard.

‡The reputed relics and other objects brought from Jerusalem and sold in Europe by medieval pilgrims (palmeres) might be cited as parallels.

⁽³⁾ See my "Rock Pictures" (*Journal of African Society*, plate, page 354, October 1934). For the reputed significances attributed to bells, cowries, fringes, beads, etc., see my "The Ufa or Camel-Litter of the Arabs" in the *Journal of the African Society Illustrated*, pages 73-4, January 1931.

⁽⁴⁾ *S.N.R.*, vol. III, page 86; vol. VII, page 111, etc.

⁽⁵⁾ See "A Complete Body of Heraldry," by Jos. Edmondson (*Mowbray Herald Extraordinary*), London, 1780. Vol. 1: pages 1-23 are historical; plate 2, fig. 45 (star); plate 3, fig. 13 (disc); plate 4, fig. 47 (swastika); plate 5, fig. 3 (hand); plate 5, fig. 44 (eye in rayed-sun); fig. 46 (sign of the Trinity); plate 8, fig. 44 (three trenchers and a plate), etc.

The Egyptian mamelukes had elaborate crests and the illustrated article in the *London Illustrated News*, pages 356, *et seq.*, should be consulted for typical specimens of Seljuk art, from which much of the so-called Arab art is derived. Artin Bey published a work illustrated by coloured plates on the heraldry of the Egyptian mamelukes.

adopted. In many cases users of these means consider that their efficacy is lost if their purport is known. This seems to be most marked in the case of charms or protective objects used by females. For this reason the reluctance of most Moslems to discuss or admit the use of magic can be understood.

Although there are numerous allusions to Djinns (Genii, evil and good) in the Quran it would appear that the only orthodox preventive against evil is written or spoken prayer. Many of the older Cairo buildings have verses from the Quran inscribed over the doors and pious inscriptions are common on European medieval buildings. The use of inscribed extracts or written passages from the Quran as amulets is well known to all who have lived in Moslem countries. In several well authenticated cases knowledge by the victim of "evil magic" being wrought against him, or the result of a false oath have produced fatal results⁽⁶⁾. In such cases the ancient death penalty still holds good in British Law.

To the present writer it seems more reasonable to assume that well known modern or ancient religious symbols such as the Christian Cross, Labarum, the sun, moon, stars, etc., were considered inherently *repellent* to the powers of darkness and evil⁽⁷⁾. The date at which the crescent was adopted as the badge of Islam is now controversial apparently. It was adopted probably from the Zoroastrians and not the Sabaeans, after the Persian conquest. During the Persian occupation of Egypt there was a large colony of Jews at Elephantine Island where they had a temple. As the Jews have been expert craftsmen in metals from an early period it is possible that the use of crescents, etc., as prophylactics has never ceased in that part of Upper Egypt⁽⁸⁾. The Axumites when they destroyed Merôé were professedly Christians and the pagan symbols (stars, etc.) had been replaced on their coins then by those of the Christians. Similar changes are noticeable in the Roman coinages. The radiate portraits of the orthodox rulers and the figures of gods (on the reverse) were suppressed after the conversion of Constantine the Great who adopted the Labarum and other Christian symbols.

In considering this question of saucer decoration in Upper Egypt therefore it must not be overlooked that it was in A.D.629 (when Muhamad destroyed the idols at Mecca) that he spared the black stone (a meteor) in the Qaaba⁽⁹⁾. This meteorite is set in a circular frame at the south-east corner of the Qaaba. It was removed by the Carmathians but subsequently replaced. Whether this plate cult in Upper Egypt has any relation to the veneration shown by all

(6) Sir Edgar Bonham Carter in *S.N.R.*, vol. VII, page 17.

(7) The Romans absorbed many foreign gods into their Pantheon as the results of their conquests. In A.D.204 the black stone of Persinus (a meteorite) which was the symbol of the local goddess was brought to Rome. In A.D.218 Heliogabalus brought a meteor (the local idol) from Edessa and unsuccessfully tried to foist sun-worship on the Romans. The biblical record of the capture of the Ark is a typical example of the practice of removing the gods of defeated enemies so as to destroy their power. As late as A.D.563 Narses, the Byzantine general, attacked the Blemmyes and sent their goods from Philae to Constantinople.

(8) The last Persian occupation of Egypt lasted from A.D.616-626, and twenty-five years later the Moslems occupied Egypt. The Jewish colony alluded to above was prior to the Christian era.

(9) Illustrated in "The Dictionary of Islam" by Hughes.

pilgrims to the Black Stone of the Qaaba I cannot say. It is the most ancient relic of Islam and occupies a place comparable to the True Cross of the Christians of which there are reputed fragments in Europe. The romantic history of the spoils taken from the Temple of the Jews at Jerusalem by the Romans forms an epic in medieval history⁽¹⁰⁾. It is not unreasonable that the veneration shown by Moslems to the Black Stone would be similar to that of the Cross or a crucifix. The question as to whether "animism" is not the basis of religion is a much disputed point.

In Upper Egypt plate or saucer decorations are sometimes seen over the houses occupied by Hajis. This may be merely fortuitous. The practice of making the pilgrimage was very general when I was in Egypt. The fares from even such remote places as Java were very low. Special steamers were run from Constantinople and the Black Sea ports and I travelled in a pilgrim steamer from North Africa to Alexandria. Mecca was probably then the greatest annual international market in the world and the number of persons making the Haj has never been equalled. Most of the pilgrims took merchandise from all parts of Europe, Asia and Africa which they bartered or sold and took back merchandise from remote parts to sell. By this means they paid the expenses of their journey. Hakluyt gives good accounts of medieval travellers who bought and sold en route to India from Europe. I have seen the great Tripoli caravan at Alexandria and the departure of one of the last large caravans from Suakim to Berber and the west. In conclusion it is a matter of history that the open profession of Christianity did not survive in Upper Egypt as it did in Dongola and on the Blue Nile as far as Abyssinia.

I do not remember seeing any evidence of this saucer cult in Syria, Turkey or North Africa or in the towns of Tintah, Cairo, Rosetta, Suez, Benha, Abukir or Damanhour. There always seemed to me as great a difference between the Egyptian of Upper Egypt and the fellah of the Delta as can be found in Britain between the natives of two counties separated by similar distances. There is a noticeable difference in the speech. The women in Upper Egypt (upon whom the continuity of old customs so much depends) lead much the same life as the peasants of their sex did in our remote villages when I was a boy. Although the men from Upper Egypt do not seem to possess the physical strength of the Delta labourers they are more adaptable and intelligent as house-servants or as manual workers, so my friends who worked at the construction of the first Aswan Dam told me. They soon learn to read and write Arabic and possibly they are more imaginative. The saucer cult had no connection with any known Christian symbol or practice. It is either a survival of an ancient cult or it has evolved through the influences of local thought and environment after Islam had been established. Lane's theory might be applicable in Lower Egypt where the "indirect approach" is most common in most of the affairs of life. In respect to requests much is due to an exaggerated sense of politeness or an underlying sense of fear ingrained through

⁽¹⁰⁾ See Gibbon "*Decline and Fall of the Roman Empire*," 1844, London edition, cap. xli, pages 660-661, etc.

many generations of servitude. This indirect approach is not unknown in Spanish correspondence where the request or refusal is so wrapped up in polite phrases that at one time it was difficult for business men to decide the real gist of a long letter.

PART 2

EAST AFRICA

In East Africa there was a common practice of affixing bowls of a Chinese type in the façades of tomb-mosques or on the headposts of tombs. This custom which was copied by the Arabs and native Swahili population is attributed to the Shirazi (Persian) colonists. These people first appeared on the coast after the murder of the Caliph Ali at Kufa in A.D. 660. It was probably the worship at and the pilgrimages to the shrines of Ali the son-in-law of the Prophet at Kufa and Kerbela that has caused the greatest schism and bloodshed in Islam which lasts to the present day.

The Shirazi colonies of Alides and their influence on the natives probably reached the zenith of their power and prosperity in the twelfth or thirteenth century of our era. They declined in importance after the Caliphate was re-established under mameluke protection in Cairo⁽¹⁾ in A.D. 1260 by Sultan Berbars. Their mosques in East Africa were seized, adopted for other purposes and destroyed by the Portuguese and Moslems of other sects.

The architecture of the mosques, tomb-mosques and tombs of the Shirazis is very distinctive. *It has been well described by Major Pearce,⁽²⁾ Mr Norman Forster⁽³⁾ and others who have visited the ruins recently. The buildings are in a very dilapidated condition and there are no minarets remaining. Most of the buildings are roofless and the columns have been removed. The tombs are of various designs and one or two have an end designed like a miniature mosque. The tomb-mosques are similar to the mosques but no minaret has been built and they are much smaller. †The distinguishing feature about the tombs is the abnormally high headstones which are often ten to twenty feet high. This headstone varies in shape. One is like an Egyptian obelisk, others are round columns and at least one is rectangular.

NOTE.—In Egypt, North Africa and Palestine a number of crafts and arts is hereditary. Some methods have not changed nor have the patterns of jewellery and earthenware or glass. Persian, Greek, Roman and Byzantine are reproduced and can be recognized easily, especially in articles sold to tourists.

*The following dates may be useful for reference in the text:—A.D. 637 the Caliph Omar entered Jerusalem. Egypt occupied A.D. 638. Yezdegerd, last Sassanide Persian king, died A.D. 651. Hasan ibn Ali married one of his daughters and Muhamad ibn Abubekr another. Firuz (son of Yezdegerd) died at Sigan (China).

†The term "Arab art" used in Egypt is a misnomer. The correct term should be "Egyptian Moslem art." Islam has absorbed into its architecture the designs of most of the countries which came under its sway. Arab houses consisted of tents or similar primitive structures and mosques or places for prayer were in the open, probably circles of stones, as any one who has lived on the Red Sea littoral must realize. The Qaaba was probably the largest building and possibly the first of its kind in Mecca.

(1) See my "Shirazi Colonizations of East Africa" in *T.N.R.* No. 3, April 1937, pages 40-81.

(2) "Zanzibar, the island metropolis."

(3) "A note on some ruins near Bagamoyo," in *T.N.R.*, April 1937, pages 106-109.

On the face of these *headstones, or stelae as they have been termed, were generally fixed two or three bowls of Chinese design one above the other with the open bowl outwards; that is, it was cemented at the base on to the headpost. Some of the tombs have been decorated similarly and a number of the tomb-mosques have had patterns of various kinds made in bowls on the façade.

These Shirazi headstones (there are sometimes two in later times) were generally surmounted by a capital (ornament) shaped like the well-known conical Moslem turban. This has been described sometimes as a pineapple and as a general rule the term "phallic" applied to headstones of this type. The early headstones in Egypt appear to have been generally of a lesser height and the turban was not so conical in form. †In later years the form of the soft felt "fez" bound round with an emma (turban) was adopted. At present the headstone is surmounted by a representation of the conventional blocked "tarbush" made in Europe or Cairo. As far as I can gather there is no foundation for statements that the Shirazi headposts were phallic in character any more than other Moslem headposts elsewhere. I have found that as a general rule Moslem tombs were largely a matter of individual taste and indicated the rank and wealth of the deceased, much as was customary among the Romans or the people of to-day. The royal tombs at Constantinople, Cairo and elsewhere are good examples of changing fashions.

These Shirazi sites are now avoided by natives who have not scrupled to remove the bowls for sale to travellers until the supply has been exhausted. At the same time the niches in the façades designed for votary offerings (similar to those found elsewhere) show signs of food, etc., having been placed there. I have no doubt that if the bowls were replaced the natives would consider them as some form of charm, to sell which or make one does not seem to impair its efficacy. The most potent evils are attributed to the "evil eye" by day and Djinns by night. Some of the bowls which have been removed are now in London and other museums where they are exhibited as samples of Chinese art. There is some doubt as to the Chinese origin of many of these bowls, some of which have been sold to collectors. It would appear that Chinese artisans were sent from China to Persia as late as the seventeenth century where they established a factory under the patronage of Shah Abbas. These Chinese artisans made bowls of imitation Chinese porcelain and forged the ancient marks after copying the style⁽⁴⁾. The practice of praying at the

*Similar headstones were not uncommon in Egypt in medieval times where the influence of Seljuk architecture is much in evidence during the early mameluke period. I have seen some very tall headstones in the North African cemeteries. The representation of a Siwa on one of these Shirazi tomb-mosques (undated) is significant. It evidently indicated that the deceased was a Chief or perhaps "Diwan" of Shirazi-African descent. It is a tenable theory that the cult of ancestor worship in Africa may be Asiatic in origin and not unconnected with the practice of praying and taking oaths on the tombs of Islamic saints in Moslem Egypt, North Africa and the Sudan.

†Some of the tombs may have been of the open domed type. There are some tombs in Khartoum and elsewhere in the Sudan which have detached columns as ornaments outside the domed tomb.

(4) Major Pearce, *op. cit.*

tombs of relatives in times of distress, etc., is not so common in Egypt and among the orthodox Moslems as it was among the Shi-ites and Shirazis⁽⁵⁾. Certain of the occasions at which prayers and offerings are made at graves as described by Lane are still observed but it is only among the elderly and leisured men that I noticed public praying at the times at which the muezzins warned the faithful in Egypt. From historical records it was the practice for the Shirazi to pay special veneration to the tombs of their ancestors, make offerings and habitually pray there⁽⁶⁾. The destruction of the tombs may be the result of a wave of Wahabism from Oman. The growth of superstition may be attributable to the decline in ritual or ceremony accentuated by sectarian strife and civil wars. At all events we have in East Africa a series of monuments which have never been systematically examined and recorded. Admiral Guillain was not a recognized Orientalist. Unfortunately the descriptions and data published are insufficient to compare these monuments with those of Islam elsewhere. In each case the observer has had very limited time at his disposal. No detailed surveys have been made and the magnetic bearings of the axes of the tombs and mosques in respect to the kibla (direction to which prayers are made) or the methods of burial are not disclosed in the accounts which I have seen. A certain amount of alignment of the tombs is noticeable in the illustration published by Mr Forster. Beyond the fact that part of the tomb consists of a very high headstone there is no resemblance between these monuments and the famous Axumite stelae-thrones⁽⁷⁾.

The Chaka mosque had originally fifteen of these Chinese bowls arranged in an open square above the doorway and down the line of the posts. Some of the other decorations illustrated closely resemble those on the walls of El Azhar. Both rope pattern frames and the continuous star-rayed patterns sometimes associated with representations of the moon (as distinct from the prolonged rays of the sun) are conspicuous decorations.

As most readers are aware Muhamad altered the calendar from the solar one of "the days of ignorance" to a lunar one, and the kibla from Jerusalem to Mecca.

⁽⁵⁾ The original Shirazi were Shi-ites but at some time later they seem to have conformed to the orthodox (Shafi-ite school of Sunnis) as the Malays and most eastern Moslems have done. See J. Walker "The History and Coinage of the Sultans of Kilwa" (*Numismatic Chronicle*, fifth series, vol. xvi, pages 43-81), and his articles in the *Encyclopaedia d'Islam*, Editor Dr Wensincke, Leyden. At a later date the Swahili adopted the Imam of Muscat who was recognized by the Sherif of Mecca. At present the sect which acknowledges the Aga Khan is powerful in East Africa. Each of these various Moslem sects have left their effects upon the architecture, customs and mentality of the East African peoples in a similar way that the various creeds professed in different classes of the community have done in England during a similar period.

⁽⁶⁾ See case cited by me of young prince Yusef educated at Goa (*op. cit.*).

⁽⁷⁾ The late Sir John Kirk made a number of drawings and took some photographs which were published in Brown's "Story of Africa." Kilwa has been illustrated by Dr Petermann and Lamu by the late Major Stigand ("The Land of Zinj"). The fact that the Germans were among those who have demolished some of these ancient monuments shows the necessity for a careful record being made before they become so ruined that only the foundation marks will be traceable. One of the illustrations by Sir John Kirk shows a wall covered by Chinese bowls in a private house. The bowl found by Miss Caton Thompson at Zimbabwe may be a link with one of the Shirazi settlements.

The midday prayer is not held at midday but at some four or five minutes after the meridian. Prayers are forbidden at sunset and sunrise. I cannot suggest at present any purpose for the bowls than that of a decoration or a permanent votary offering to the deceased. As an Appendix I add an extract regarding a primitive method of calculating the time. It should be noted that when Drury was a captive in the Island of Madagascar the Persian title *Divan* was applied there to local native kings and their sons.

I am unable to describe specimens of this bowl decoration in Bali, the Celebes or elsewhere but I expect the present generation (both in East Africa and elsewhere) regard them as charms, whatever may be their origin.

All the great religions of the world have absorbed many local practices from their converts. There are records that certain African tribes have relapsed to paganism in certain places where Islam (or even Christianity) was not well established in medieval times.

The terms Semitic and Jewish or Hebrew are not regarded by all scholars as synonymous—since archaeology has made so much progress and revealed ancient civilizations in Asia. It would save much discussion and divergence of opinion if writers would cite the Bible (Book, chapter and verse) and allow readers to form their own opinions when quoting parallels in customs, etc. The medieval missionaries in China, Turkestan and Tibet saw parallels in those countries with their own creeds. The Persian Moslems adopted much of the ancient religion, etc., of the Magi.

NOTE.—The authorities cited are those in my note on the "Saucer or Plate Decoration in Egypt." I have omitted mention to *British Encyclopaediae*, although I have read the various articles. The intention and the observance of many mystical or charm cultures are definitely local in character. Since I have been lame (through arthritis) kind hearted persons in England, France, etc., have recommended me so many curious remedies that they would in themselves form a volume.

Circles and geometrical figures were prominent features in Moslem and early medieval decorative art. A fifteenth century brick building at Kersey (Suffolk) has a circle at about the height of a man's eye on each side of the entrance door.

I cannot see any connection between the Shirazi bowl decorations and the magical bowl cult in Egypt and elsewhere, and am unable to express any opinion as to whether they formed part of a time piece, synchronized or otherwise, with Mecca. I cannot trace anything in the "Pageant of Persia" or the numerous works cited by the author.

Appendix

Time told by Shadow

Extract from "Madagascar, or Robert Drury's Journal of Captivity in that Island" (c.1702-1716); Capt. Pasfield, R.A., edition, London 1890. Malagasy circumcision ceremony as described by Francois Cauche an eyewitness in 1642, also Ogilby (both cited by Capt. Pasfield).

"Afterwards they bring the children into the Lapa, adorned and dressed with corals and bracelets, precious stones and other ornaments about their necks. Here they stay till the tenth hour of the morning, with an empty body, which they can discern by the shadow of a Man in the Sun, standing upright, for they measure the shadow with their feet, which they call Liha or Pas, which being nine of their own feet's length, is the time of Circumcision. Then the drums beat and the circumciser puts on his garments and binds a fillet of great strong white cotton-yarn on his left arm to scour the knife."

* * * * *

From text above cited (page 180) presents according to the ability of the giver such as a cow, calf, beads, iron shovels, hatchets, etc., were presented. The shadow measured was three and half times the length of the Umosi's feet. The Umosi was a medicine man; no priests. Iron hoes and shovels were used as currency. Bark clothing worn by common people and cotton by the better class.

The term "empty body" refers to a bowl or similar article held by the Umosi.—A.E.R.

It was the custom of the men to shave their heads on the death of a ruling prince (Deean=Diwan).

NOTE.—The practice of determining the time for prayer by Moslems is described by E. W. Lane, *op. cit.*

Maizan

By A. Sillery

"And some there be, who have no memorial."

THE history of African exploration has many great names. Famous men, whose achievements are recorded in books and whose names are forever associated with the places which they discovered or through which they passed. But there are others now forgotten, who set out with the same ideals as their more famous brethren, but whose ventures came to an untimely end. One of these was Maizan. At the end of 1843, Maizan, an *enseigne de vaisseau* in the French Navy, fresh from a journey in East African waters on board *La Dordogne*, Captain M. Guillain, formed the project of crossing Africa from east to west. He received official approval to his plan, sailed for Bourbon (now the island of Réunion) where he embarked on the ship *Le Berceau*, Captain Romain-Desfossés. He arrived in Zanzibar in November 1844 and stayed there for eight months, constantly changing his programme, adding to his baggage, and learning Swahili. He finally went across to Bagamoyo after the rains in 1845, and rashly pressed on into the interior, without waiting for an escort that the Sultan had promised him and accompanied only by Frédéricique, a Madagascan servant, and a few followers⁽¹⁾.

The explorer probably took the caravan route taken later by Burton and Speke and by Speke and Grant, which runs from Bagamoyo along the eastern bank of the Ruvu or Kingani River. It then crosses the Mgeta River, an affluent of the Ruvu, in the south-eastern (Magogoni) area of what is now the Morogoro District, and goes on through that district towards Ugogo and Unyamwezi. In due course he arrived at Dege la Mhulo⁽²⁾, a village on the Ruvu River, towards the south-western corner of the present Temeke (Kiserawe) District, upstream from the Mafizi ferry on the Dar es Salaam-Morogoro road. This district was in those days, as it is now, inhabited by the Wazaramo, with a sprinkling of other tribes. In 1857 Burton found the Wazaramo an "ill-conditioned, noisy, violent and impracticable race. A few years ago they were the principal obstacle to Arab and other travellers entering into East Africa." They were ruled by scores of avaricious and untrustworthy petty headmen, called Pazi, each of whom had to be placated by gifts such as cloth and beads. According to Speke they "take blackmail from travellers with high presumption when they can".

(1) Burton says that forty musketeers went to Bagamoyo with him but that he left them there. According to Guillain he neglected to avail himself of a chance of going into the interior with a large caravan and let it go off without him.

(2) That is, bird of the bush. The late headman of the area (now, alas, imprisoned for peculation of public funds) assures me that Dege la Mhulo was the name of a man, not of the area. The village is N'honge. Dege la Mhulo's son is said to have died in 1905. It is a not uncommon error for villages to be given the names of prominent inhabitants; old German maps contain several examples. *Kwa Fulani* easily becomes *Fulani*.

The Headman of Dege la Mhulo, Mazungera, received the young Frenchman hospitably, and entertained him in a friendly manner for a few days. Then one day he worked himself up into a great rage, reproaching his guest with having given goods to other chiefs, and on a given signal Maizan was trussed up to a tree outside the village, where Mazungera first tortured him by severing his joints and then cut his throat. He was about twenty-six years of age when he was killed. According to Burton the object of the torture was to discover where he had hidden his treasure: he had been warned by Hamerton, the British Consul in Zanzibar, that the luxury of his outfit would be dangerous to him. Frédérique was saved by the chief's wife and managed somehow to get back to Zanzibar. "Thus perished", says Burton "an amiable, talented, and highly educated man, whose only fault was rashness—too often the word for enterprise when Fortune withholds her smile".

In 1846 a French frigate, *Le Ducouëdic*, of the Bourbon and Madagascar Naval Division, commanded by the same captain Guillain with whom Maizan had sailed in *La Dordogne*, arrived at Zanzibar in the course of a voyage of exploration and demanded that the Sultan, Sayyid Said, should send a punitive expedition to arrest the murderer. Guillain had a second mission in Zanzibar, which was to obtain certain currency concessions. After prolonged discussion, described by the sailor with some asperity⁽³⁾, the Sultan gave him a written promise that unless Maizan's murderer could be trapped in any other way, an expedition would be sent. With this Guillain was satisfied. Sayyid Said evidently kept his word, for Burton records that a force of three or four hundred men set forth and in the course of a skirmish, wounded Hembe, son of Mazungera, and captured the man who had beaten the drum at the murder. This unfortunate was passed off as Mazungera, no doubt in order to satisfy the French, and was chained in front of the French consulate for two years; he was then heavily ironed to a gun, under a shed, where he could hardly stand or lie down. He died about 1859.

Burton and Speke are both agreed that the murder was instigated by the traders on the coast, who were afraid that the Maizan expedition would bring competitors into the field and reduce their profits, but it is only fair to the traders to say that the sole evidence produced by either is Speke's account of his conversation with Hembe. Speke passed through Dege la Mhulo with Grant in 1860 and talked "cheerfully and confidentially" with Hembe; according to Hembe, it was he who committed the murder and not Mazungera. As an excuse he pleaded that he was acting on the written orders of his father "*who was a Diwan on the coast*".

This story seems far fetched: there is nothing in other records, or in the results of such enquiries as I have been able to make, to suggest that Mazungera was anything but one of the many predatory, quarrelsome, arrogant

⁽³⁾ "With Arabs, no hope is to be placed in logic or commonsense to bring about some change in their ideas. They listen calmly, and appear impressed by your arguments, then, when you think you have made your point, they repeat imperturbably, word for word, what they said to you before, and you realize that the debate has not advanced a step. Against fighters like these one needs patience and resolution. I armed myself, as much as possible, with both."

little headmen of the time, of whom Uzaramo seems to have had more than a fair share. Burton, who gives a most circumstantial account of the murder, does not suggest that anyone but Mazungera committed it⁽⁴⁾. So whatever sources of information Burton and Speke may have had, the only evidence they actually produce which links up the murder with the machinations of people on the coast, disappears.

Guillain, who knew Maizan personally, was in a better position than either Burton or Speke to describe the start of the expedition. His account of Maizan's stay in Zanzibar, which he had from Brocquant, the French Consul, is much more circumstantial than that of the British explorers who arrived on the scene much later. He gives a pathetic picture of the young explorer, up against infinitely greater difficulties than he had expected, a prey to all kinds of anxieties and fears, unable to decide to go forward yet prevented by his pride from going back. Then one day a French man-o'-war was reported on the horizon. Maizan thought it was *Le Berceau* and dashed across to the mainland fearing that he would be dishonoured if Captain Romain-Desfossés should find him still in Zanzibar. In the meantime, according to Guillain, news of the intended journey had reached the mainland and had spread among the tribes; Guillain has no doubt that either from greed or political intrigue, or perhaps both, Maizan's fate had been decided by his murderers long before he started.

Guillain is not so reliable in his description of the end of the adventure. Unlike Burton and Speke, he did not know the hinterland. He tells us, for instance, that the name of Maizan's murderer was "Pazzi" and that he was "the chief of a neighbouring tribe". Actually, as we know, Pazi was merely a sort of title borne by the hordes of petty village headmen, of whom Mazungera was one. Guillain's account of the actual killing too, differs from Burton's, and tends to show that at least the unhappy man was not tortured.

As for the murderer: "The reader will rejoice," says Burton, "that the miscreant Mazungera, who has evaded human, has not escaped divine punishment. The miserable old man is haunted by the P'hupo or spirit of the guest so foully slain; the torments which he has brought upon himself have driven him into a kind of exile; and his tribe, as has been mentioned, has steadily declined from its former position with even a greater decline in prospect". Mazungera son of Hembe son of Mazungera died a year or two ago at his home in the Sungwi area of Uzaramo, many miles from the scene of his grandfather's crime.

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 SPEKE, "Discovery of the source of the Nile."
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 (An account of the journey of exploration of the frigate *Le Ducouëdic* 1846, 1847, 1848, told by her captain.)

(⁴) On the other hand, he did not speak to Hembe, when he went through with Speke in 1857. "Illness served me as an excuse for not receiving him."

Gulio

By R. B. Allnutt

THE marketing of native produce is notoriously beset with difficulties and any contribution to their solution is welcome. The *gulio* system, where it exists, plays a valuable part in the distribution of goods, and it is the possibility that its introduction to other areas would be beneficial that emboldens me to present a brief description of how it works in the Tanga province of Tanganyika.

The *gulio* is of indigenous origin. Long before Europeans had established a foothold in East Africa it was a feature of native life throughout what is now the Tanga province of Tanganyika, and also in parts of the Northern province. In those days the *gulio* was almost exclusively a barter market. A number of these markets were scattered throughout the populated areas. Each market was held weekly on a given day of the week at a fixed place. A large and shady tree was the usual venue. Here the housewives from miles around would meet to exchange their surplus produce, a chicken for a cooking pot, a cake of tobacco for a basket of rice, and, of course, gossip for gossip. The trading was (and still is) mainly done by the womenfolk. In fact it is said that in Chaggaland the women were in the habit of attacking with sticks and stones any man who was presumptuous enough to put in an appearance. In the coastal areas, however, men have always attended the markets; in fact it was not uncommon for them to dispose of slaves at a *gulio*.

Since those far off days the *gulio* has undergone changes. The smaller markets retain much of their original character, but the larger ones tend to be sited at established trading centres and are attended by Indian, Arab and native merchants. Trade goods of all kinds are on offer and cash transactions are more numerous than deals in kind. In areas where the majority of the male population are employed on estates most of the markets are held on Sundays, to enable the menfolk to attend, for labourers are amongst the best cash customers. In many cases the sisal estate market-shed has displaced the mango tree as a site for the *gulio*. But in spite of these modifications the *gulio* still retains its essential function of providing a market for and a supply of all kinds of produce at a definite place on a definite day.

The variety of articles exposed for sale or exchange is astounding, particularly at a big *gulio* such as that which is held every Thursday at the village of Muhesa, about twenty-seven miles inland from Tanga. At about seven o'clock in the morning streams of people begin to converge from all directions, on foot, on bicycles, in lorries and by train. In no time the main street is thronged with hundreds of gaily clad women and more soberly attired men. At first sight the place appears to be a bedlam of disorganization, but on closer inspection one finds that each "line" of produce has its appointed place. In one corner there is the African Covent Garden—piles of mangoes, jak-fruit,

oranges, lemons, bananas, etc., with lorries drawn up handy for loading and quick despatch to Tanga and Mombasa. Next door is the pottery section, and immediately behind that are pyramids of dried cassava. Billingsgate is divided into two; the wholesalers of dried shark set up their scales in one alley, while the smaller fishmongers (of both salt and fresh water fish) have a separate pitch. There is a coconut corner and also a rope and fibre arcade. Goats are tethered in a quiet backwater and fowls (also tethered) are allocated to another bay, out of the main stream of traffic. The centre of the main street is given over to women with baskets of maize, cowpeas, green gram, tomatoes and the like.

Sometimes the juxtaposition of articles is not a little incongruous; for instance one finds that the aged vendor of ylangylang flowers, which young ladies buy to perfume their best clothes, invariably takes up a position next door to a pile of villainously stinking dried shark. But nobody minds. The main thing is that if you go to Muhesa on a Thursday you can get almost anything you want from the most expensive trade goods to the cheapest of locally produced articles, including wooden spoons, hoes, hoe handles, flour sieves or baskets; and to clinch the bargain you can go and have a cup of tea and a hot dog, or chunk of sweetmeat and a pinch of snuff.

Apart from the trading facilities offered by markets like this, there is another aspect which is perhaps worth touching upon: Nutrition. We all know now that monotony is the basis of malnutrition, as distinct from under-nutrition. To live on maize alone is bad. To live on cassava alone is worse. Now even in a small district like Tanga the lines of demarcation are sharp between citrus areas, maize areas, rice areas and cassava areas. To avoid unbalanced diets Tanga natives must exchange produce; the *gulio* makes it easy for them to do so. Take a look, as I did, at the loads of a man and his wife going to, and returning from Muhesa *gulio*. They took in two loads of dried cassava. They went back with rice, onions, curry powder, coconut oil, salt, washing soda, tobacco, two kinds of leafy wild vegetable which I was not able to identify, dried shark, oranges, and, for mental digestion, the current issue of that distinguished contemporary of this paper, *Mambo Leo*. Lots of vitamins in that collection.

No one would claim that the *gulio* is a perfect marketing system. It is not. By reason of the fact that it is in part a social function—an occasion for donning at least one's second best robe, meeting friends and exchanging scandal—it tempts people to go to market with little or nothing to sell when they would be better employed with a hoe. Likewise one sees two individuals from the same village, one a seller and the other a buyer of cassava, both walking ten miles to market instead of doing a deal at home, simply because they enjoy market day and all it implies. Nor is the *gulio* an economical system of disposing of produce in bulk. But it does fulfil a useful function in native life and could probably be introduced with advantage to other areas where no similar system exists.

NOTES

Bush Paths in East Africa

THROUGHOUT East Africa as I know it between the Nile and the Zambesi, bush paths, in order of quality, that is grading and durability as well as utility, are made by elephants, hippopotami, hyenas (temporarily), men, antelope (to and from their drinking places), rodents and forest duiker. Most men-made bush paths I know in the coast lands are open only in the dry season after the annual grass fires. The prodigal growth of the grass and creepers and shortish tough vegetation soon closes these paths after the advent of the short rains. Certain paths remain "open" but to force and suffer passage through them is strenuous and painful work, not to mention discomfort. The drenching from morning dews or from rain-wet vegetation when using these footpaths must be experienced to be believed. The depths of foot-pounded and mixed mud, the unexpected pot-holes, the channel-like condition of the track worn away between higher grass or bush-grown land, are all features of men-made paths in the rains. Often they are streams of running water and actually develop into deep storm channels bridged by the bared roots of trees stretching across future ravines. The native foot passenger then makes another parallel path by use of his feet only in avoiding the deep channel.

Elephant paths never appear to erode into storm channels in this way. They are very well graded in comparison with the bee-line ambitions of winding native paths, whose up hill and down-dale or rather up bank and down bank courses, cause many a slip and fall, especially with loads weighting the passenger. Elephant paths seek saddles in hilly country with evidence of engineering skill. Elephants have their great weight to consider.

Superstition appears to affect direction with native paths as well as fear of forests and certain *jangwani* or desert land however small. They will be afraid to pass by some *msitu* or small patch of rain forest or "primeval" forest. Other such growth in another place will have no terror for them. Yet a tree where dwells some evil spirit will send a path diverging from its course. Men-made paths may be in several series according to tides or to the seasonal or weather states of surface water or mud.

The nightly-used paths of hippopotami travelling to and from their grazing grounds become so well worn with a central ridge in them, and cross each other at such various angles, that one cannot but liken them to the tracks on big railway junctions. Hippopotami have legs so squarely placed and use such small

steps that they tread paths in this manner, whereas elephants drop their long legs and feet neatly behind the other in the process of taking their great weight from the correct basic point. If speeding, their feet do not fall directly in line. It needs speed to let an elephant tread widely.

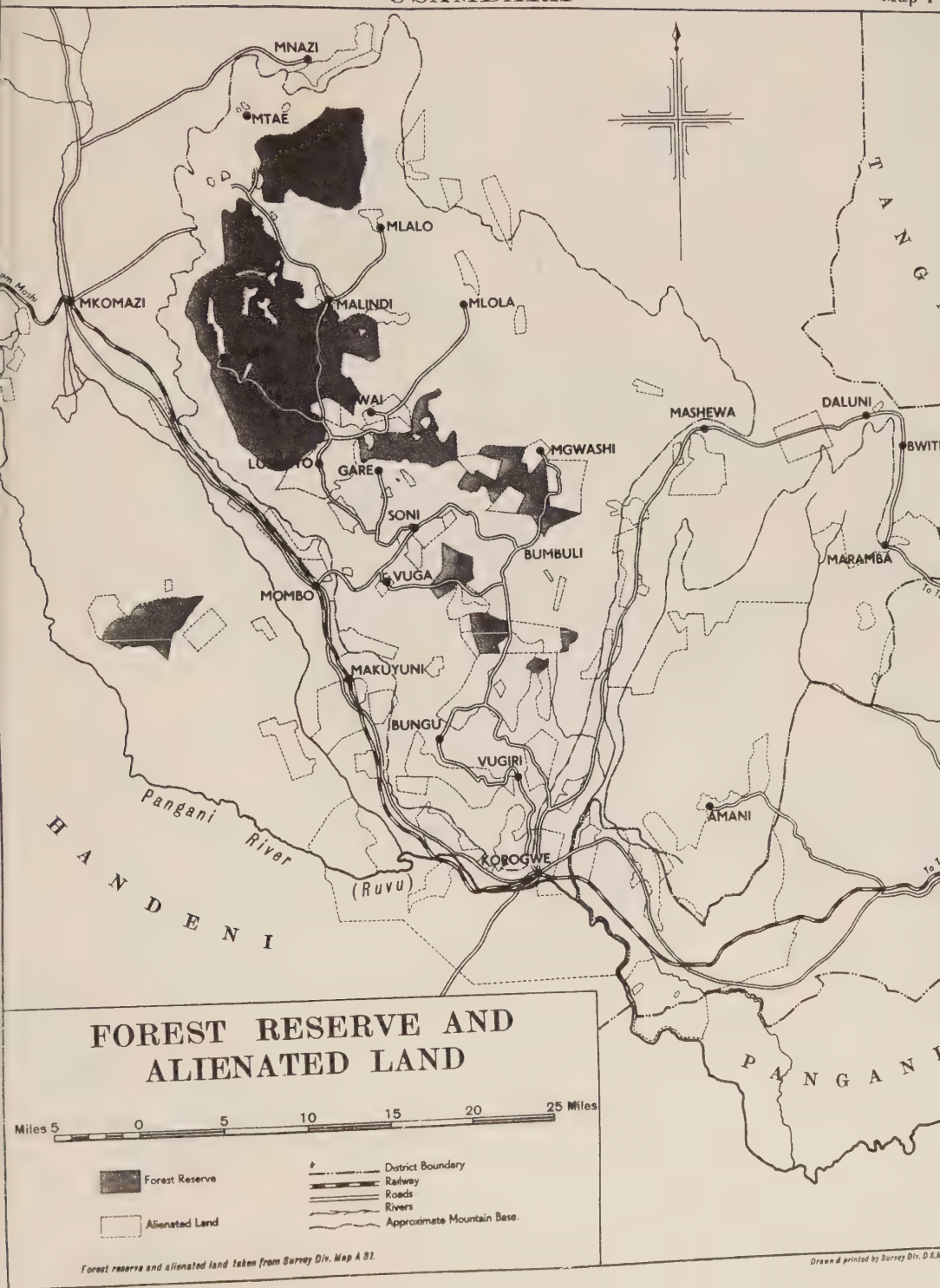
When I was shooting elephants around one place in the Kilwa district in 1924, hyenas made such good direct paths through the rainy season grass, that natives began using them and they have now become permanent routes, as the cattle tracks in Sydney, Australia, have become metropolitan streets in the second town of the British Empire.

Natives and hippopotami and elephants share paths. The foot route (there is no other) between Mkalinso above the Pangani Rapids on the Rufiji and the villages below, across the peninsula, sometimes follows hippopotami roads and sometimes deteriorates into a men-made track.

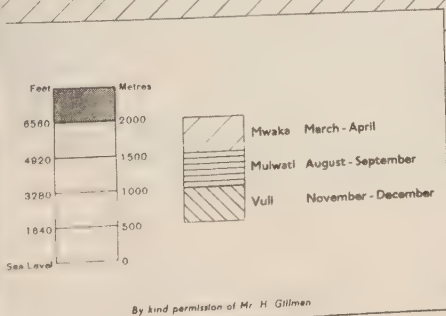
Busy elephant roads reach from the Indian Ocean on the Kilwa-Rufiji district border right across the continent to the Atlantic Ocean in the Belgian Congo. A motor cycle could use them most of the way.—R. DE LA B. BARKER.

USAMBARA

Map I



Map II WESTERN USAMBARA Planting Seasons

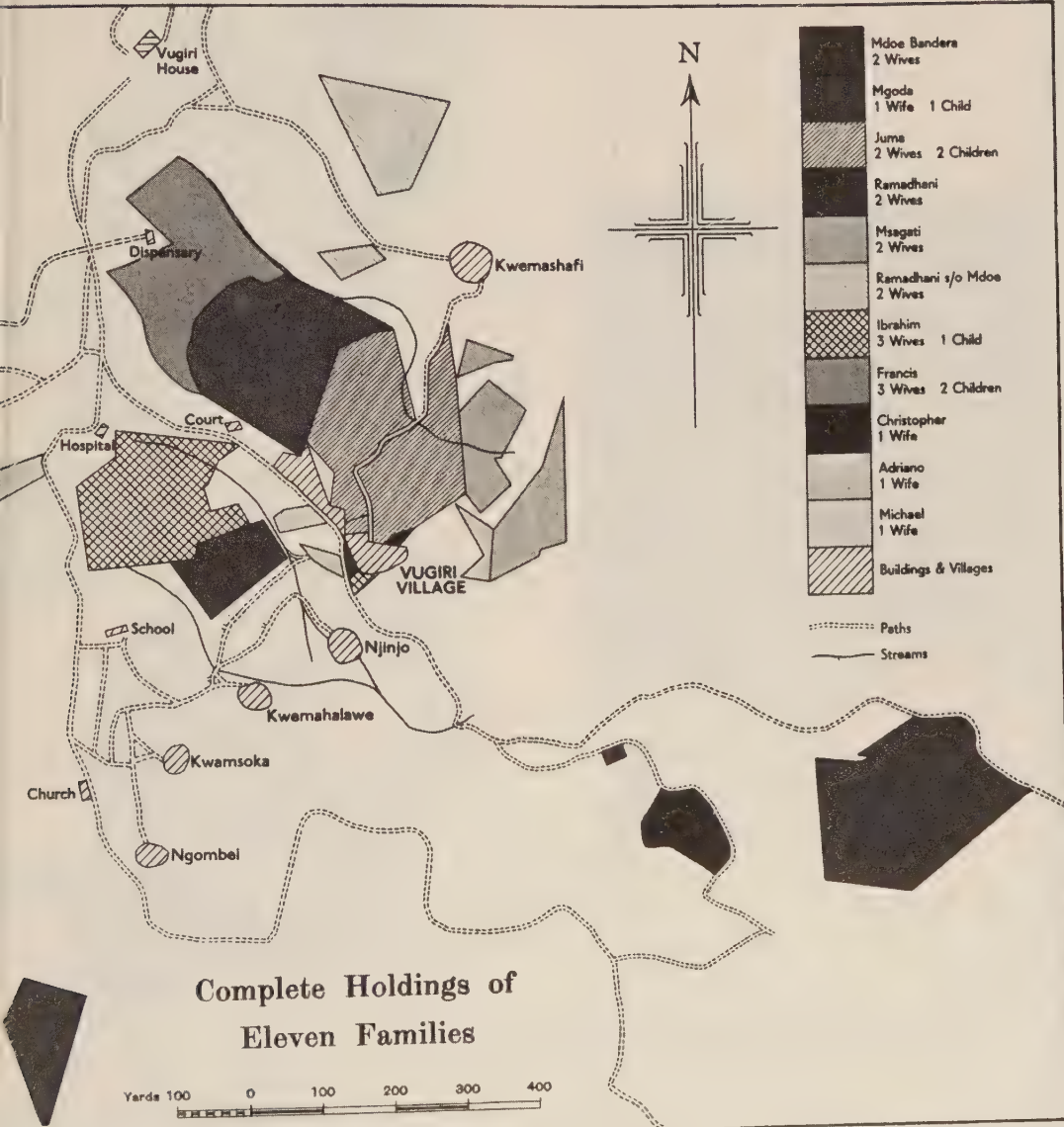


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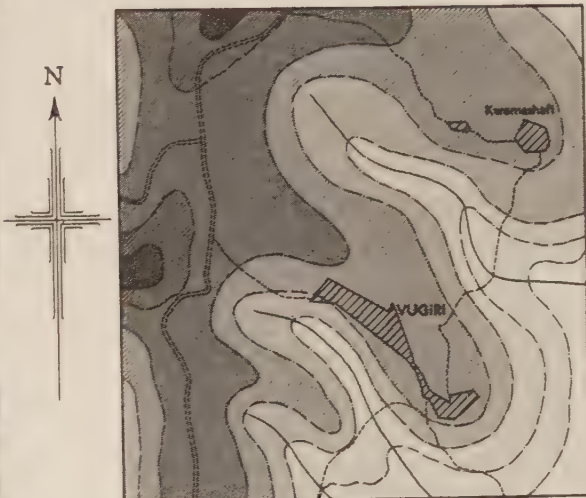
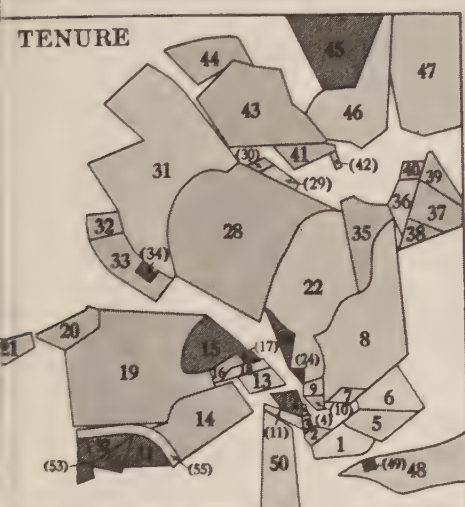
VUGIRI

Map III

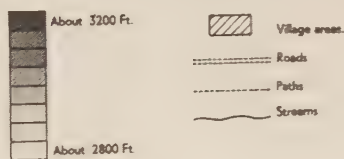


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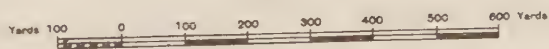
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