

TANGANYIKA NOTES AND RECORDS

List of Articles

	Page
Mafia Island <i>By Dr. Baumann</i>	1
The Hehe Royal Graves <i>By Dr. Stierling</i>	25
Record Ivory in the Collection of the British Museum (Natural History) <i>By J. E. Hill</i>	29
The Habitat-Distribution of Birds of Northern, Eastern and Central Tanganyika with Field Keys, Pt. IV <i>By N. R. Fuggles-Couchman, M.B.O.U.</i>	32
The Dory Arrives in Tanganyika <i>By V. T. Hinds, B.Sc., F.Z.S.</i>	69
Mangroves	72
Calumba Root	74
Correspondence	75
List of Publications	77
List of Separates for Sale	81
Books Review	84

JANUARY

1957

No. 46

Reprinted with the permission of *The Tanzania Society*

JOHNSON REPRINT CORPORATION JOHNSON REPRINT COMPANY LTD.
111 Fifth Avenue, New York, N. Y. 10003 Berkeley Square House, London, W.1

First reprinting, 1968, Johnson Reprint Corporation
Printed in the United States of America

PUBLISHED QUARTERLY

THE JOURNAL OF THE TANGANYIKA SOCIETY

Tanganyika Notes and Records

Editor: C. O. PATERSON

Editorial Board:

A. H. PIKE, C.M.G., O.B.E.

O. BLAKE A. D. B. WYLIE, O.B.E.



JANUARY 1957

Number 46

PUBLISHED FOR THE EDITORIAL BOARD AT DAR ES SALAAM

PUBLISHED BY THE TANGANYIKA SOCIETY

P.O. BOX 511

DAR ES SALAAM

Contents

	Page
Mafia Island <i>By Dr. Baumann</i>	1
The Hehe Royal Graves <i>By Dr. Stierling</i>	25
Record Ivory in the Collection of the British Museum (Natural History) <i>By J. E. Hill</i>	29
The Habitat-Distribution of Birds of Northern, Eastern and Central Tanganyika with Field Keys, Pt. IV <i>By N. R. Fuggles-Couchman, M.B.O.U.</i>	32
The Dory Arrives in Tanganyika <i>By V. T. Hinds, B.Sc., F.Z.S.</i>	69
Mangroves	72
Calumba Root	74
Correspondence	75
List of Publications	77
List of Separates for Sale	81
Books Review	84

MAFIA ISLAND

By Dr. Baumann

Prefatory Note by Dr. G. S. P. Freeman-Grenville, D.Phil., F.R.N.S.

Baumann's account of the Mafia islands is known to me only in this translation which forms part of the Mafia District Book. It is said to have been made by a former clerk in the Kilindoni Boma. I have not been able to trace the original German.

Baumann's very thorough research was carried out in 1895. His account is still the most complete study of the Mafia islands: it is also a document of first-rate historical importance as portraying the islands as he saw them. The great German plantations, the coconut palms planted with geometrical precision, did not yet exist. The patriarchal life of the plantations was untouched, and he gives a detailed picture of their economy. Slaves formed the mass of the population: as a legal status slavery was not abolished here until 1922.

Chole, now a picturesque ruin as one sees it across the water from the Mafia Islands Fishing Club, was in its final heyday as the German administrative headquarters. As Baumann foresaw, it had to be abandoned since it was only accessible to vessels at high water. The present capital, Kilindoni, was built in 1911, in preference to the ancient capital of Kisimani Mafia which Baumann recommended.

Much, therefore, is altered, even if the general outlines of the portrait are still valid. In the historical sphere we know little more than he did. In 1955 the ancient town of Kua, on Juani Island, was cleared of bush. Sir Mortimer Wheeler has described it as "potentially the Pompeii of East Africa". It covers not less than thirty-five acres, far more than Baumann saw. It has a palace, seven mosques, two cemeteries and the ruins of many stone houses. These cannot yet be dated. Kilwa coins of the thirteenth to fifteenth centuries have been found here as well as Chinese and Mongol pieces.

It is strange to read of a population of 2,000 at Kisimani Mafia. Today there is one hut. Half the town has washed away in a cyclone in 1872: in 1882, when it was visited by Lieut. J. B. Eustace, (later Admiral Sir John Eustace, K.B.) part of whose diary is in my possession, it was already much reduced. Baumann is surely wrong in stating that it was abandoned through fear of attack from the coastal tribes. There is no evidence for any such thing. More probably the building of Kilindoni drew its trade thither, making its continued occupation pointless. This settlement has an older known history than any in Mafia. It is generally supposed to be the Mafia of the Kilwa History, of which the Arabic version was published in the year of Baumann's visit. He did not know of it. Medieval pottery, of the same type as that found in the lowest stratum of Gedi, has been found here, and nearly five thousand coins, mostly of the Kilwa Sultans, have been recovered since Baumann's time.

MAFIA ISLAND

The following work on Mafia Island is the result of a journey made by Dr. Oscar Baumann in the winter of 1895 in this part of the Zanzibar Archipelago. Of the young African travellers, there is scarcely any so thorough as he. He has on every occasion contributed widely to the geographical knowledge of the places which he has explored. Before the Anglo-German treaty concerning Mafia Island, signed in Zanzibar in 1890, nothing was known of this place, and a thorough scientific exploration was needed of those places adjacent to the coast of Zanzibar, whose chief three islands are Zanzibar, Pemba, and Mafia, and the small neighbouring islands. In order to proceed with this work, Dr. Baumann wrote to the undermentioned scientific society requesting assistance, which was granted in expectation of good results, which has been so well fulfilled. Despite repeated attacks of fever, he began his researches in the spring of 1895, at the end of which year he returned to Zanzibar, where he was appointed Consul for Austria-Hungary. He has written the materials which he collected in his journey, concerning Mafia and its surrounding islands, which place is naturally of great interest to us, as eventually it was to become our possession. By land and sea, we wish Dr. Baumann every success.

The Geographical Society of Leipzig,

Dr. Hans Meyer, President.

Leipzig, Summer 1896.

MAFIA ISLAND



Digitized by the Internet Archive
in 2024

I.

Where the Rufiji River pours its waters through the vast delta into the Indian Ocean, a chain of islands is situated off the coast of German East Africa, which might well be termed the Mafia group after the chief island. They form the southern extremity of the Zanzibar Archipelago, and are the only part which has come into the possession of Germany by the Anglo-German treaty of 1st July, 1890. All these islands contain coral, and belong to the reef off the coast of German East Africa. Only in Mafia do we find traces of earlier formations.

The main islands of this group have been known to the world since human memory. The smaller form the temporary home of fishermen. Mafia, the chief island, is the most southerly of the three big islands of the Zanzibar Archipelago. It is the smallest of these, though possessing the longest coast line, and differs in many respects from the two northern islands, namely Pemba and Zanzibar.

With regard to the name Mafia, it is to be doubted whether this is of Swahili origin. The inhabitants as well as the Swahili elsewhere never refer to it as Mafia, but as Chole. (*Note*.—These proper names are to be pronounced according to Steere's orthography). Besides Chole, it is also spelt in German Tschole, but never Shole. The inhabitants distinguish between "Chole mjini", the town, "Chole shamba", which includes the main island of Mafia, where there are no houses, but only estates and plantations. The name "Mafia" (pronounced "Māfia"), is only used when mentioning Kisimani Mafia, which place is situated on the most westerly cape.

The Arabs, on the contrary, call the place Mafia, and have some tradition relevant to it in their history.

Mafia, always written in the chronicles as Monfia, appears to have been included in the kingdom of the first Sultan of Kilwa, in the year 1000 A.D. According to Barros, Ali bin Hasan, who migrated from Shiraz, sent his son at this date to Mafia, and the island was conquered, remaining subject to Kilwa for several centuries, nor did the arrival of the Portuguese in the sixteenth century cause any important changes. It is improbable that they settled here extensively during their occupation of Kilwa. Their whole stay in East Africa made changes of a ephemeral nature only. They never intended to maintain any garrison here, nor to make it a colony; their only wish was to occupy the island to keep open the sea route to India.

It is not strange that many places in their possession were of little value. Rezende's chronicle mentions that in the seventeenth century Mafia was subject to the Sultan of Kilwa, who had by then become independent of the Portuguese commander of Mozambique, who had an arsenal there, and that the "Moors" were forced to procure provisions for the Portuguese ships calling at Auxoly (Chole), Coa (Kua, on Juani), and Jibondo, and that the Portuguese had built a small fort on the East Coast of the island, which in war time was garrisoned by twelve men from Mombasa. This statement does not agree with the traditions of the inhabitants, which state that the Portuguese fort was situated near Kirongwe on the north-west coast, where, a few years ago, in the neighbourhood of Jogo, remains of masonry were to be seen which have since been washed away.

It is possible, however, that the small settlement mentioned by Rezende, was later removed to Jogo.

At the beginning of the eighteenth century, Mafia came under the control of the Imams of Muscat, which control was only nominal however, and the island became a hiding place for pirates. It was in 1840, when Seyyid Said moved from Muscat to Zanzibar, that Mafia became in reality part of his kingdom, and an Arab Liwali was stationed there. Just at this time, the Sakalava of Madagascar came in small canoes, and attacked Mafia. They stormed Kua, the capital, on Juani, stealing men and money. These prisoners were later recaptured near Lindi, by a small force on its way back to Lindi. After this calamity, which is within the memory of living inhabitants, the capital was moved from Kua to Chole. At the beginning of the present century, the coast was roughly charted by an English battleship. A German traveller, by name Kersten visited the place in 1864; during the Arab rebellion of 1888-90, Mafia remained undisturbed, as the peaceful inhabitants of the island never cared for war and trouble.

As Zanzibar and Pemba, Mafia was to have been ceded to England, but by a supplementary treaty, Germany renounced the *Stephenstrasse* on Lake Nyassa in return for the island. The then *Bezirkhamtmann*, Herr Von Zelewsky, went to Chole, hoisted the German flag, and posted a Sudanese garrison there. The soldiers of that place, who had been stationed there a long time, under a coloured Under-Officer, resigned and created trouble. Thus the beginning of German rule in Chole has unfortunate recollections.

After the Sudanese, a Hindu Customs clerk was sent to Chole, where he dealt weakly with the inhabitants, and one day absconded with the Customs cash. A second Hindu took his place, and he was replaced in 1892 by a German officer named Vinstein. At the end of 1894, Customs Supervisor Rutter was sent to Chole, where he was the only European. Political affairs were entrusted to a black Akida, Nebhan bin Nassor, brother of the famous Seleman bin Nassor, but he was dismissed by the order of the Governor, Von Wissmann. At the inquiry held by the Kilwa *Bezirksamtmann*, *Freiherr von Eberstein*, he was convicted of corruption and abuse of authority, for which he was imprisoned. At present Chole is controlled by the Customs officer.

The shape of Mafia is that of an obtuse-angled triangle, of which the obtuse angle is formed by Chole bay, which, with the islands opposite to it, Chole, Juani, and Miewi, is like a lagoon. The maximum length of the island is from south-west to north-east. The area is 434 square kilometres. It is almost level; in some places only is it 30 metres above sea level. The greatest height is not more than 50 metres.

Geologically, Mafia is merely a coral island. A few traces of old, probably Jurassic, limestone are to be found in the neighbourhood of Upenja, in the centre of the island. Throughout the middle of the island, from Chole Bay to the north coast runs a depression full of innumerable small lakes, which doubtless was once a lagoon. Probably the island as it is at present once consisted of two separate halves, the junction having been effected by the work of the coral insects in the so-called lagoon. Cut off from the sea, this lagoon contains several fresh water lakes.

A similar process may be observed in Chole Bay, where the inner passages are becoming shallow, so that in the near future the bay will become a lagoon, and the coral ridge south of the island, which is caused by the south current and is dry at low tide, will become one with Mafia.

It is the case with Mafia as with Pemba and Zanzibar, that the coast which is exposed to the full force of the Indian Ocean is broken. Mlalapwani is its only bay, which is very rocky and surrounded by breakers so is avoided by vessels. On the east side, one can observe extensive coastal erosion. On the shore are to be found quantities of Pumice stone, and I was interested to hear from the elder fishermen, that in their youth they seldom, if ever, found this stone, so it may be conjectured that it has come from a volcanic eruption of Krakatoa.

On the east coast there is a belt of coral which is very narrow, and has at no point acquired that degree of dilapidation which is to be found in Zanzibar. The origin of this may be attributed to the fact that strong winds caused the deposition of only vegetable soil in the jagged young coral rock. The island is very reminiscent of Dalmatia Mattock, owing to its rough character and numerous hollows and tunnels, and the vegetation which abounds in the red earth of the depressions.

Disappearing streams are also to be found in Mafia; the Pangani stream, for example, rises near the village of Upenja, and vanishes suddenly into the coral rocks north of Mlola. These rocks have elongated basins which at high tide are filled with sea water, and almost dry at low tide. The coral belt stretches from Ras Mkumbi to Chole Bay, parallel to the coast, and has as its prolongation the three islands of Miewe, Juani, and Jibondo.

To the west there is an area occupying the remainder of the island, where sandy soil predominates. As opposed to the extent of red clay soil in Zanzibar, this latter soil is only to be found at isolated points, chiefly on the south coast of Chole.

As with the east coast, the west coast is of stony character, from Ras Mkumbi to the Bweni Cape. One can see stretches of mangroves interspersed with tall casuarina trees. Towards this belt the shore slopes down to a low terrace. At Mfungoni a steep slope begins, which follows the shore up to the south of Tirene, from which point sandy mangrove tracts are to be seen up to the cape by Kisimani Mafia. The south coast of the island is steep and of a considerable height, with a narrow belt of mangroves. From Ras Utende begins Chole Bay, or rather Chole lagoon, the shores of which are level throughout, running into a slight slope a little way inland, and which stretches to Mchangani in the rocky part of the east coast.

No proper observations have been made concerning the climate. There seems to be a heavier rainfall than on the neighbouring mainland. The steady sea breeze makes the temperature more bearable, and although it is not free from malaria, Mafia may be considered more healthy than either Pemba or Zanzibar.

Mafia is quite well off for running water, despite its small area. On the east there are only a few springs. The springs on the west are never dry, though their volume is small, and seldom of great depth. Several streams converge on Chole Bay, including those rising from small lakes, as do others at Kichewi on the north-west of the island and on the south coast near Kisimani Mafia. At the mouths of the broad mangrove tracts there are many rivulets, which may be used as ferries at high tide.

A peculiarity of Mafia is the numerous small lakes, which the inhabitants call "tanda", of which I have counted seventeen, and there are possibly others of which I am unaware. A great number of these are in the Ndagoni area, the rest being scattered in the north of the island. There are no lakes in the south. Almost all bear clear traces of their original connection with the sea. The water is fairly clear, and is surrounded by reeds. Their banks are level, and their depth small. Both of the lakes at Chunguruma and Kichewi are surrounded by high forest.

This last is the only place on the island where high trees are to be found. With this exception the vegetation consists of bush land. Very thick undergrowth is to be found on the coral land, sprouting in the fertile soil. It bears a peculiar, almost thorny, nature, and is interspersed with tree spurges. Especially in the north part of the island, this vegetation forms a regular forest, which does not grow to a great height.

In the very sandy areas which are not under cultivation, there grows a light coloured bush. There are only a few acacia trees, though Phoenix Palms (called locally ukindu) are common. A high shrub similar to Erica exists, and also a half-wild Akaju (Koroshu) with big leaves (Mbibu, *Anacardium Occidentale*), which bear an edible fruit and kernel, which when baked has an almond like flavour. With the exception of the barren coral land, there is scarcely any place which has not its mangrove trees scattered here and there, which give evidence of a former cultivation.

Nothing can be said definitely as to whether there are many indigenous varieties of plants in Mafia, in every respect the vegetation is similar to that growing on the neighbouring mainland. The same applies to the fauna. There are many species on the mainland which are not found in Mafia, whereas the converse does not hold good. Especially remarkable on the island is the hippopotamus, that thick-skinned animal, which is totally absent in Pemba and Zanzibar. It is well known that this animal occasionally takes to the sea, so these on the island may well have crossed from the delta. In Chole Bay it has been observed that they do not avoid an occasional sea bath. It is not surprising that these animals are driven afield as this may be caused by the high floods of the delta combined with favourable winds, and on arriving here, they find it a tolerable home. The numerous small lakes are used as bathing places by day, and the meadow land gives them sufficient pasture.

Especially in the rainy season, they cause damage by their grazing in and trampling of the natives' plantations. The wild pigs, however, cause greater damage, and are very common. To prevent their depredations, the natives protect their plantations with wooden hedges. Damage in addition to that caused by rats, pigs and hippopotami, is caused by monkeys, which abound on the main island, and especially in Juani. As to game, there are dwarf antelopes, called chiessi, and plenty of guinea fowl and wild pigeon. The weaver bird causes some damage to the coconut palms. The only natural enemy of these and domestic animals is the water python (chatu), of which large specimens are to be found. There are no crocodiles. Many large harmless lizards (kenge) exist. On the main island there are white ants which are also especially numerous on Chole Island. The natives do not keep bees, though their honey is to be had.

II.

The Wambwera are the oldest of the inhabitants of Mafia, and are similar to the coast Swahilis between Kisiju and the mouths of the Rufiji. The name is derived from the village of Mbwera, situated in the delta, opposite to Kisimani Mafia, whence they emigrated long ago. They speak a good Swahili dialect, and are very like the Wahadimu of Zanzibar, whom they resemble in figure. They reside throughout the island, though only in limited numbers in the north, and are the only inhabitants of the coral lands.

They are dark coloured, and do not differ in their dress and mode of life from the coast Swahilis. They belong to the Sunni sect. In former times they avoided living on the coast on account of the Arab slave raiders, and hence their villages are inland on the main island; under Seyyid Said there was peace and some came to the coast. The number of women exceeds that of the men. They are a peaceable and contented people, and delight in agriculture and cattle tending. They have known no war for a long time. Even cases of youthful quarrels are rare. They live under petty chiefs. The aristocrats amongst them live at Bweni.

The Shatri are very old inhabitants of Mafia, of which they represent the nobility to a certain extent. They are the main inhabitants of Chole, and also live at Kipingwi and Kipandeni, possessing estates all over the island. They call themselves Sharifu (i.e. descendants of the Prophet) and derive their descent from Hadhramout. They are of the same line as the Shatri of Barawa, Siu (near Lamu) and Wasin, with whom they are related by inter-marriage. Their emigration took place several centuries ago, and they are thought to be the Moors referred to in Shirazi and Portuguese chronicles. The Shatris are of good physique, and an attractive light brown colour, light and dark coloured persons are also to be found amongst them. They have wavy hair and are of striking stature. These good features go to prove that they are a mixture of Arab and Negro types, of which sometimes the former, sometimes the latter, predominate.

They dress well, and are of a cheerful disposition, far preferable to the pure Arabs. They are well off, and are the main plantation owners on the island. They belong to the Sunni sect and are strict Mohammedans, almost all receive Koranic instruction. They talk only Swahili amongst themselves, though a few know Arabic.

Their custom is to build mosques on their estates, and bury their dead in walled graves with memorials like a type of pyramid. Moreover they use intoxicating drinks openly, in moderation, and never to excess. They cannot be held inferior to the Muscat Arabs, to whom they consider themselves infinitely superior.

In addition to the above mentioned old settlers, there are also to be found later arrivals in Mafia. Among these, the slave population plays a great part. A large proportion of these came originally from the Rufiji District, where they were sold cheaply owing to locust invasions. They belong to the tribes of the south of German East Africa, being chiefly Nyasa and Yao. Some of them have been born on the island. Most of them are the property of the Shatris, and a few of the Wambwera. Their condition is tolerable, as the plantation work is not very strenuous, and they receive enough food. Their masters treat them well on account of their respect for German rule. They are considerably better off than the slaves of either Zanzibar or Pemba.

Probably soon after the occupation of Seyyid Said, a number of Muscat Arabs settled on the island. Some of them founded a village near Kisimani Mafia, and intermarried with the native women. Their descendants still live at Kisimani Mafia. They belong to the Ibadhi sect, but speak only Swahili, and have features which distinctly show mixed blood. A few genuine Muscat Arabs live in Chole Island and Kirongwe.

Since some years Suri fishermen from the Persian Gulf have settled in Mafia.

Shihiri and persons from Hadhramaut and Makalla are to be found on the island, of whom some are owners of estates, and others shopkeepers on Chole Island. There is only one Baluchi, who was formerly a Jemadar of the Sultan.

Swahili from Malindi have settled on the south coast near Chem Chem for two generations only. They are well off, possess estates, and are of similar status to the Shattris.

In Baleni there is also a small colony of Comorians.

I was informed that there are twenty-two Indian traders on the island, they are not confined to Chole Island only, but also have shops on Mafia, especially round Marimbani and Kirongwe. They include Mohammedans and "Banyanis". The former consist of Khojas and Bohoras, the latter Veda believers, Brahmins, Bhatias, Banias and Jains, all of whom come from the Bombay Presidency. They operate only in connection with firms in Zanzibar, and periodically return home with their profits.

It is not easy accurately to compute the population of Mafia, as a number of the inhabitants live not in towns or villages, but scattered about in the plantations. My estimate is that there some 6,000 inhabitants, including those of Chole, Juani and Jibondo.

III.

The trade of Mafia is chiefly confined to agricultural products; this is detailed below. Of the trees cultivated, the coconut palm ranks first in importance. It has been cultivated here for a long time. The Wambwera cultivate it only for their own needs, and have only recently taken to laying out larger plantations, as are chiefly owned by the Arabs and Shattris. The Arab, Salim bin Said, who for several years administered the island on behalf of the Sultan, had large estates near Tirene, and made a good profit therefrom. The largest plantations are situated round Chole Bay and on the south coast, and to the north between Tirene and Kichevi. Good ones are however spread about the interior, and in the northern part of the island around Baleni, Upenja, Kirongwe, Changwa, etc. On the whole it is to be noted that the palms on the small islands from Kwale to Songo-Songo do not do well, those on Chole bearing small nuts.

The native cultivators in Mafia first plant the seedlings in nurseries, and then transplant them. The Wambwera particularly make the common mistake of planting the palms too close to each other. In the plantations, which are carefully cultivated, the trees are planted in regular lines. By way of manure, the surface earth is thrown into the hole in which the seedling is planted.

In well kept plantations, the bush growing between the palms is cut and piled around the stems. In many, however, bushes and weeds grow freely amongst the palms, which does them much harm.

The coconut thrives well in the sandy soil of Mafia, and bears freely after four or five years. They are thought to mature at the end of six years. The Mafia palms bear extraordinarily large nuts, larger than those I have seen in Africa, India, or Ceylon. Occasionally one finds a small variety bearing yellow nuts, which are only used for drinking, however. (Mnazi ya Pemba.)

After the shells are removed, the ripe nuts are exported. They are rarely sent away with only the outer husks removed. Coconut coir is not exported, but is used for rope making. To collect this coir, the fibre of the husks is buried on the shore, at low tide. After some months it is dug up, and the coir obtained by beating this on a plank with boards. This is done till it is perfectly clean. The rope makers twist the coir into rope, which is exported in bales. The shells of the nuts are used for making ladles to draw water. The leaves are used for roofing and making walls, for which they are exported.

The total number of palms on Mafia may be estimated to be 2,000, if the area under cultivation is 40 square kilometres, and each tree occupies 20 square metres.

There are a few betel palms, which do not thrive, the produce of which is consumed locally. (This Areca palm is called locally "Popoo".)

Rice is cultivated in all parts, though not in sufficient quantities, so that it is necessary to import it from elsewhere. The same applies to sorghum which is planted, chiefly on the coral land, by the Wambwera, with good results. Muhogo is planted in the shambas between the palms, and is the chief article of native diet. Simsim is planted considerably, mostly near Kironwe, and is exported. Besides this there are several kinds of pulse, pumpkins, cucumbers, tomatoes, potatoes, and, to a certain extent, tobacco. As to fruit, there are fine mango trees of good quality, and bananas, oranges, lemons, guavas, and the above mentioned Akaju trees. Pineapples grow everywhere. Sugar is cultivated a little, and the produce consumed locally. Salim bin Said owns large plantations near Tirene, where he has started a refinery. One finds that this last does not pay in Mafia. Cloves are cultivated here and there, but rather experimentally, with partial success, but the Mafia agriculturalists are accustomed to the easy cultivation of coconuts, and are unable to undertake clove planting, as this requires more work and attention.

With regard to forest produce, small quantities of inferior copal are to be had near Kironwe and Chem Chem, and this is exported. Mafia has been described by the Portuguese as a land producing resin, whereas it is to be noted that copal is imported here from the coast.

In Mafia cattle breeding receives particular attention. As agriculture did not suffer from the locust swarms, so the cattle escaped almost wholly the dreadful epidemic that wrought such havoc among cattle in East Africa in 1891.

The German East African Government directed that the number of cattle in Mafia should be increased, and export to the coast and to Zanzibar was prohibited. As a result, the former fair number of cattle has increased, and there are today 2,500 in Mafia. The small Zebu cattle thrive in the meadows of the island. Their flesh is not very tasty, and their yield of milk limited. The cattle of the Wambwera wander half wild about the bush in the north of the island. Goats, sheep, ducks and poultry are to be had everywhere. Good donkeys of Arab blood are used for riding.

The coastal inhabitants of Mafia and its neighbouring islands are largely occupied with fishing, of which the products are now mentioned. Dried fish, especially shark (papa), and cuttlefish (pweza), is consumed locally and also exported. A by-product, the evil smelling shark fat (sifa), is also used for caulking vessels. Tortoiseshell of a superior quality is to be had in large quantities. On the extensive coral banks south of the island, mother o' pearl shells of small size are found. At a considerable depth, pearls are obtained, but are only fished by skilled Arab (Suri) fishers. These men wait till low tide before diving. There appears to be a plentiful quantity of precious corals, but the natives ignore these however; the previous demand for cowrie shells having lapsed, this industry is quite dead. Other shells are exported in small quantities for decorative purposes. Accurate statistics of the export of all fishing products, including those of minor importance, are to be seen in the lists of the Chole Customs house, as the fishermen find it pays to deal with dhow owners.

In describing the local products of any place in East Africa, it is usual to furnish an exhaustive list of exports, since there is generally no question of industry. In this respect, Mafia is an exception, as it has rich home industries. In the former pages, reference was made to the manufacture of rope. This is exported to an annual value of Rs. 10,000. Chole-made mats are well known on the coast and in Zanzibar. The annual export of these is worth Rs. 13,000. This figure does not include the mats in local use or carried by sailors and passengers. The various kinds are rectangular sleeping mats (mikeka), oblong praying mats (misala), and funnel-like dish covers (makawa). Circular vitanga are also sometimes made as a rest for the hand-mills with which the women grind flour. On receiving orders, fine floor mats (mikeka jamvi) are woven. In Mafia there are also made rough mats (jamvi) such as are exported from Bagamoyo, of which the small quantity produced is disposed of locally.

The material for these is obtained from the Phoenix palm, chiefly the "Phoenix Reclinata" (Ukindu), which grows abundantly all over Mafia; the immature green leaf is cut and dried, till they turn a straw-coloured yellow. These are then cut into strips 2 mm. wide, and are used in weaving, partly coloured and partly uncoloured. A root (mdaa) is dried and burnt and yields a black colour; green is obtained from two different leaves (nanaha). Red (fua), and yellow (manjano) are imported by the Indians. The ukindu fibres are boiled with the dyes. Strips of one colour (ukili) are then woven, 6-25 mm. wide, and these are used to work in that colour into the pattern (ukili ya kazi). These strips are made in the star pattern (nyota), arrow pattern (mshari), and an imitation of European calico (kanga). They are then sewn together, for which ukindu is also used, and a border (pindo) added, and the mat thus completed. This work is done by the women, the men sometimes helping in the sewing. The Wambwera, as slaves, and the Shatri make mats; in the harems of the latter, excellent work is executed. The colour varies with the width of the ukindu, and the beauty of the mat with the care with which it is woven. It is a pity that fine work is seldom done, as there is a great demand for coarse and cheap ones, and nobody is prepared to pay proportionately for finer work. It would be a work for the Agricultural Department of the Government of German East Africa to encourage this industry, which could be developed, and profitably, as the Austrian Government has done so in Bosnia, and the British Government in India, with respect to domestic industries which were on the point of dying out. Ship-building is

The above mentioned products constitute the exports of Mafia, while the imports include piece goods, fez caps, ironware, glassware, kerosene, and the innumerable other articles that are consumed in other parts of East Africa, their countries of origin being Europe, India, and America. It is strange that large quantities of rice, sorghum, and pulses, are imported from Zanzibar and the coast. Rice comes partly from India, and partly from the Rufiji, whereas the other two (including the quantities that are imported via Zanzibar) come exclusively from German East Africa. That such a rich island as Mafia cannot produce even the limited quantities required by its population, is attributed to the natural indolence of the tropical races, and also to coconut cultivation. When anything, e.g. corn, is required, a few nuts from the tree are just brought to the Indian shop, in exchange for the needed article, and this is much simpler than planting corn, which may be greatly damaged by hippopotamus, wild pig, and monkey. Moreover, agriculture, which is left to the women, suffers, as their attention is occupied by the lucrative mat industry. It would be incorrect to suppose that this extensive import of food supplies from external sources (e.g. Zanzibar), causes unsound economic conditions. The extension of coconut cultivation and the mat industry, and permission to export cattle, will cause an immense increase in the grain imported.

Exports from Chole to Zanzibar

						<i>Value</i> <i>Rs.</i>
Coconuts about 4,000,000	...	...	...	...		100,000
Copra 45,000 lb.	...	...	...	...	...	3,500
Coir Rope 150,000 lb.	...	...	...	...	...	8,000
Mats and Ukindu	...	...	...	...	...	12,000
Mother o' Pearl 200,000 lb.	...	...	...	...	...	3,000
Tortoiseshell 200 lb.	...	...	...	...	...	2,000
Simsim 65,000 lb.	...	...	...	...	...	3,500
Copal, Beeswax, Ivory	...	...	...	...	...	1,000
						133,000

Exports from Chole to German East Africa

	Value Rs.
Coconuts about 37,000	11,000
Coir Rope 35,000 lb.	2,000
Mats and Ukindu	1,000
Dried Fish	3,000
Cattle 120 (exported by permit)	2,000
	19,000

Imports from Zanzibar to Chole

	Rs.
Various Articles	76,000
Rice, Mtama, Pulse	24,000
	100,000
Imports from German East Africa	30,000
	130,000

Thus exports exceed imports by Rs. 22,000. From these lists it may be seen that the whole trade of Mafia is with Zanzibar, and that financially the island has no connection with German East Africa. Agricultural produce, especially coconuts and mats, are sold to the Indians who export them to Zanzibar. The former are exported to Europe in the form of copra. As to the latter, they remain in Zanzibar, and some are exported to India, Arabia, and Somaliland. No producers send their work to Zanzibar.

The lion's share of the money is acquired by the Indians, who spend nothing in the country, and remit their surplus funds to India, where they return as soon as they have made sufficient. There is no European enterprise in Mafia.

IV

Chole is the chief trading centre, and is the only large settlement. It is situated on the island of that name. Rising above the blue water, with sailing vessels crossing the bay, with its green mangroves, strange baobabs, and innumerable slender palms, it has an attractive appearance. The population numbers some two thousand persons, whose huts are scattered about the island, interspersed with fields and mango groves. On the north side, there is a thick cluster of huts, near to the Customs house, a fine building, in which lives a solitary European official, the only officer there, who leads a lonely and unenviable existence. In the town there are mud huts, with an occasional stone building. Both types have grass roofs, as flat roofs are considered unhealthy. The Arab Akida, one of those ludicrous reformers with many followers, who might, when occasion arises, play tricks with the Prussian Under-Officer, has taken pains to spoil this attractive place with embellishments, in his blind enthusiasm. He has made wide streets set at right-angles, on which the tropical sun beats mercilessly, parallel to which are the dingy clay stalls, otherwise so picturesque. The depressing atmosphere is increased by the banana trees, planted at regular intervals by the reformer's orders.

It is incongruous to find these big streets at a place where there is no traffic, and the question arises as to why the inhabitants should be taxed for projects for which they receive no advantage. Such artificial conditions are by no means practical, and opinions differ as to whether they are beautiful.

Fortunately, the Akida did not succeed in getting these streets made throughout Chole, and one has the consolation that in the near future they will all be covered with grass. In Chole are to be found truly native quarters, with shady streets which are kept clean by the inhabitants. There are picturesque huts close to pomegranates and orange trees, on the verandahs of which sit the women, skilfully plaiting their mats. In the fields there are scattered many houses, all of which have yards walled with mtama straw. Particularly pretty are those partly preserved mosques with their wells, where the chattering women draw water. There are also pyramid-shaped Sharifu graves, shaded by banyan trees, surrounded by an old wall which encloses an uncultivated garden. None of these ruins dates back further than a century.

Chole has a fertile red soil, well suited to the mango, of which huge specimens are to be seen. The palms bear small nuts only.

Besides the Arabs, Indians, Shattris, and their slaves, there are a large number of Swahilis, mostly descended from slaves, who act as sailors. The inhabitants are civil, cheerful, easy going, and wish nothing except to earn their livelihood easily. They pursue their amusements, dances and games without any disturbance. A worse harbour than that of Chole cannot be imagined. The entrance from the east is rendered impassable to sailing ships, and dangerous to steamers by its reefs and breakers. With the exception of very small Customs boats, no steamers can approach from the west, and they have to anchor a few miles from Jibondo. Again, big native vessels and two-masted Arab and Indian "Kotias" dare not enter the narrow passage of Chole bay, which is dangerous even for small dhows and calls for careful navigation. During my stay, two ships were wrecked as they entered the harbour, and such unfortunate occurrences are by no means rare.

Further, there is a Customs order that all dhows calling at Mafia, including those loading nuts in the northern part of the island, must put in at Chole to pay Customs dues. Chole Customs house is kept very busy therefore. There are sailing boats crossing to Utende on the opposite shore, and scarcely a day passes without a dhow calling from Zanzibar and Kilwa, to unload to the sound of drum beating, and the cheerful shouting of the crew. The loading and unloading, "calfatting", and repairing often continues for several days or weeks, which period the crews willingly spend in Chole. It is not unusual to find twenty or thirty dhows in the harbour, most of which fly the German flag, and the remainder that of England, or of the Sultan.

A narrow channel, fringed with mangroves, separates Chole from Juani, which is shallow at low tide. Passage to Chole is made at low tide on foot. The inhabitants of Chole collect their firewood in Juani, the residents of which obtain their necessities from Chole; the latter number about four hundred. They consider their villages the chief places of what was once a small capital.

Juani is the second island of the Mafia group in size. It consists of stony coral land, covered with thick bush, where there abound numberless monkeys, pig, antelopes, guinea fowl, rats, and pythons. The east coast is rocky,

and hence inaccessible. The west coast has a wide belt of lofty mangroves which conceal the adjacent villages. There is only one good well there, Kisima cha Jumbe; this is cylindrical and built of massive stones. There are signs of an old partition, making two partitions, one for slaves, and one for free people. There are several huts near this well. The main centre of the island lies apart to the north, behind the mangroves, consisting of some sixty miserable huts, with undrinkable salt water. Beyond Jambe lie the inhabitants' mtama fields. There are no mango trees, and coconuts do not do well. Jambe, with its dozen huts, is the most northerly village. Its inhabitants fetch water partly from Kisima cha Jumbe, and partly from Mafia, when the wind is favourable. The inhabitants of Juani claim Shirazi descent, but are mostly actually Wambwera. The eastern part of the island is uninhabited.

On Juani there are ruins, particularly those at Kua, which lies on the shore south of Kisima cha Jumbe, from the well of which water has been fetched since ancient times. Striking stone walls enclosing rectangular places there were undoubtedly lime huts, as are to be found at Chole. Besides these there are several stone buildings and three mosques.

There is a vast rectangular building with well preserved chambers, covered with square white coral freestone. Inside and on the door posts are beams, but with this exception, the buildings contain no woodwork, which shows the solidity of the structure. The ceilings are still intact, although overgrown with a forest of vegetation. The reason for this is that only a mixture of lime and sand, without any clay being added have been used as mortar in all Shirazi houses. In the mosques are to be found niches trimmed after the Saracen style. In the houses there are cut recesses to hold lamps, etc. There are traces of a hard mortar. As is the case with all East African ruins, these buildings are without taste, and art of any sort is lacking. Though I searched carefully, I could find no trace of any inscriptions, either in the buildings, or in the tombs.

Kua dates from the Shirazi period, and is mentioned by the Portuguese historians of the seventeenth century. For a long time it was the capital of Mafia, till the Sakalava invasion in the early nineteenth century, when it was abandoned. It seems that several families had moved to Chole island before this as Kua could not be approached by ships, owing to the beach being flat for several miles.

Near Jambe, on Juani, there are the ruins of a small Shirazi mosque, containing devotional niches of trimmed stone, reminiscent of Gothic architecture. Even today there are to be found there all kinds of fragments of pots and rags. The approach is made through thick bushes. The ruins are said to be the home of an evil spirit, on account of whose presence the natives hesitate to clean the wells. When asked who built these ancient buildings, the natives name the Wadebuli, whose origin they are unable to trace. In Zanzibar, and other coast places, I was told these mythical people are called Wadeburi or Wadebri. To them is ascribed not only the building of these old Shirazi buildings and wells, but also of buildings known to be of much later date. Hitherto I have been unable to trace the origin of this tribe. They are said to have been of some Islamic faith. A well informed Mwalim of Chole states these buildings are the work of Indian architects from Diu and Damen. The Wadebuli must not be confused with the Portuguese who are usually referred to as Wareno, which word is derived from "reino", meaning kingdom.

To the north of Juani lies Miewi, a small coral island, the rocks of which are overgrown with bush. It contains many rats and pythons, and the natives think it to be the home of an evil spirit.

Though lying at a considerable distance from it, this island is really part and parcel of Chole, so reference to it is necessary. It lies on the same ridge as Juani and Chole. At low tide one can pass from Juani to Chole and Jibondo on foot. The visitor requires a good knowledge of the place, as the pointed coral rocks and deep pools make the passage difficult, and also the rapid rising of the tide is a source of danger. Usually, passage between Chole and Jibondo is made by boats. The triangular island of Jibondo has steep rocks everywhere. The village, where only a few palms are to be found lies on the bare track to the west of the island. There is a footpath from this place to the fields where the natives cultivate mtama, beans and some muhogo. Coconuts thrive on the western shore, but like those on other small islands, bear small fruit. The island consists mostly of coral, with impassable bush. The chief disadvantage to the inhabitants of Jibondo is the absence of any water supply, and they are forced to fetch water from Kiegeani, on Mafia island, several miles away. During the long rains they collect the water which runs off the roofs, and in stormy, rainless weather, they do not get water for days on end.

The population of Jibondo numbers some 250. They are dark skinned Swahili descended from the Wambwera, but call themselves Shirazi. The majority of the population are slaves. For time immemorial they have lived on Jibondo, and are descended from those Moors described by Portuguese writers. For many years, in fact till recently, the inhabitants of Jibondo were pirates, but now they are peaceful fishermen. They do not use daub in building their houses, but employ neatly woven coconut leaves. They have one Koranic school, attended by twenty boys. Agriculture is left to their slaves. Owing to the last named, their wild goats are protected, which animals thrive, though they get no drinking water. Pythons are their only enemies.

On Jibondo are the ruins of a small Shirazi mosque, which is considered to be older than the Kua ruins. In the bush to the east of the village is a dried up well. The natives wished to dig a well in order to have a water supply, and consulted the witch doctor. The latter caused some goats to be slaughtered near the well, and directed that none of the flesh should be taken into the village. In digging, there were found many pieces of pottery, which shows that there had been a well there previously. Salt water began to percolate, however, and the witch doctor attributed this to the fact that some of the flesh had been taken into the village, and digging was discontinued. Probably it would be better if the salt water were excluded by means of walls, and the well would have to be sunk near a spot where there is fresh water, and to the necessary depth, by which means the former inhabitants got their water. There is no doubt that after several trials water will be found in this island.

There is no place of greater importance than Chole, in connection with which mention has been made on Juani and Jibondo, in the Mafia group. Utende and Marimbani contain only scattered plantations and Indian shops. One such trade centre lies also at Kipandeni, at the mouth of the river. A village of fifty huts called Kipingwe lies in the mangrove area of that name. There live there some light-skinned Shatri of loose morals. A rich old dame, binti

Hemedi, gets, through her female slaves, especially good mats. She lives in the main building of the island, which is of bricks, with a makuti roof. Mchangani and Mlola are small Wambwera villages. Between Kipingwe and Kirongwe no villages are found. There are some country seats, three of which are Kalangama, Kipora and Upenja, where there are stone-built mosques and houses. The last mentioned belongs to the intelligent Shatri, Said Omar.

In Kirongwe there are no villages. Scattered in the plantations are the stone-built house of Mahomet bin Said and several Indian shops.

On the mangrove covered shore near Kirongwe, there were, in former days, the ruins of the so called Portuguese fort of Jojo, of which no ruins now survive. Still further north, near Msikitini, are the ruins of a mosque, built after the Shirazi fashion, with trimmed stone and archways. The actual Wambwera villages are situated in the north of Mafia. Of these the chief is Bweni, which is scattered along the shore, and also the smaller ones of Kanga, Kidakuli, and Mnari, all of which have miserable mud huts. There are no Indian shops north of Kirongwe.

At Ras Mkumbi, the most northerly point of the island, there is a lighthouse. It is a massive square tower, flanked on both sides by the keepers' quarters. It was built in 1892 by the architect Hendricks, with only native, Wambwera labour. An intelligent Bawara Arab watches there, and has kept the lamp and tower in quite good order, aided by two Swahili. From the summit of the tower one enjoys a picturesque view of the wild waves dashing on the rocks, and to the south lies the bush-covered land of Mafia, in the dark background of which euphorbia and baobab trees are conspicuous by their paleness.

To the north-east and centre of the island there are settlements where plantations are scattered, and no special mention of them is necessary. Tirene is an exception however. The estate of Salim bin Said, to whom frequent reference has been made, which was divided at his death, has changed hands many times. His stone-built house is situated on the top of the ramp, on the slope of which are two good springs. In place of palms and betel trees are to be found dark, leafy mangos and baobabs. In his garden, Salim erected a mosque with elegantly carved door posts and lintel. The mosque, built twenty-five years ago, is in ruins, the roof collapsed. Also the house, with its coral roof in imitation of the Kua Shirazi buildings, will fall down, and after ten years the neighbouring Wambwera will ascribe the house to the Wadebuli.

In the south part of the island there are scattered estates with small groups of huts. Only on the south-west cape of Kisimani Mafia is there an enclosed place. The village lies in the mouth of a river, where dhows find sufficient anchorage. The soil is sandy, with coconut palms. There are about 2,000 inhabitants, Arabs with their slaves. On the shore are the only ruins in this part of the island, which are, with the mosque at Msikitini, practically the only examples of architecture in Mafia island. The ruins are of quarried stone, and there is a double well, for which trimmed stone has been used. All the remains show the coastal erosion, and some ruins have already become submerged. Tradition says that the Kisimani settlement is older than that at Kua. It is undoubtedly of Shirazi origin. It was abandoned through fear of attacks by the inhabitants of the coast of Africa. Kisimani is more suited to settlement than

Chole island; all sailing vessels, both those coming from the south, and those coming from Chole, must touch there, and must spend the night there. Vessels from Zanzibar bound for the south, spend several days there, in Kisimani River.

Jibondo na Mafia,
Kisimani ndio njia,
Ya kupita zombo pia.

For all new vessels and their gear
Must pass Jibondo and Mafia,

says the old shanty.

It is probable that so extensive a dhow traffic in a spot so remote from any Customs house must facilitate smuggling. Other advantages of Kisimani over Chole make one wonder whether the removal of the Customs to the former is not advisable. The only possible objection is that steamers of deep draft cannot enter there.

The removal of the administrative headquarters from Chole to Kisimani Mafia is advisable in every respect. It remains to be seen whether the Chole traffic will be transferred there, as the eastern entrance from Chole Bay is wholly impassable to native vessels. All shipping should be unreservedly removed from Chole to Kisimani Mafia.

V.

The island of Bwejuu is situated opposite Kisimani Mafia, between this cape and the mainland. It is a sand bank running from east to west, and is intersected with mounds, on the west side, there are traces of coral. There are a number of casuarinas, in which wild birds nest, and rats are to be found. To the east is a group of about thirty fishermen's huts, situated among coconut palms, which do not flourish.

Formerly the population was but temporary. Permanent settlement dates back some ten years, when there settled there a number of Suri Arabs who dug the well which gives brackish but drinkable water. Besides Swahilis, other nationalities live on this lonely sand bank. Their occupation is fishing, which is carried on by dhows of various sizes with nets and hooks. The fish is dried in the village, emitting a poisonous odour of oil and fish. Also they plant some maize, tomatoes, eggfruit, and mtama, also pulses; muhogo, and sweet potatoes do not do well on the island. The inhabitants have a fairly good diet on their island, which is decreasing in size. They drink assiduously so-called Eau de Cologne, and other spirits smuggled in from Zanzibar.

To the south of Mafia, bordering Jibondo, is a group of small islands, parallel to the coast. The northernmost sand bank, situated at the end of the Jibondo ridge, is devoid of vegetation, but visited by many sea-gulls. On the plain sandy island of Ukuza there are a number of casuarina trees. It consists of coral rocks, with no drinking water, and serves as a calling place for fishermen. There are some rats on it. Simaya, situated near the mainland, is characterized by its coral and baobabs. On Kisiwa cha Nyuni (Bird Island), there is only bush, and no casuarinas. The island is rocky and high, undermined by erosion. It is inhabited by fishermen. Kimborwe is rocky, and similar to Kisiwa cha Nyuni, it has rats and snakes on it.

The chief island of this group is Songo-Songo, the Songo of old stories, occupied in turn by Moors and Kaffirs. It stretches from north-west to south-east, rocky on the former side, sandy on the latter. To the north of this island, connected by a sand bank, which is dry at low tide, there lies the small sandy islet of Pumbavu, where casuarinas grow. The Arab, Salim bin Said, planted palms on Songo-Songo, which trees do well, but their nuts are small, so that they are left to the fishermen. The northern part of the island consists of a plateau, covered with bush vegetation. On account of the goats, the natives enclose their crops of maize and pulse with thorn hedges. The root of a plant called Kunzuru is also eaten. In the centre of the island there is coral rock, a hollow in which forms a natural cistern, which is the only water supply on the island. Nearby, on the shore lies a totally dilapidated Shirazi mosque. In the coral land is the chief village, Maweni, situated in the interior. On the sandy tract to the south are the villages of Makondeni, Kisuni and Pembeni, situated amongst attractive casuarinas, pawpaw trees and coconut plantations. The whole population numbers 300, and they claim to be offshoots of the Jibondo people. They are dark skinned, and of conservative outlook. Their villages are miserable, the walls of the huts being of makuti. The Jumbe, who lives in Maweni is considered the chief authority. Formerly they suffered greatly from the Arab slave raiders. Beyond rats, there is no fauna on Songo-Songo. The natives keep poultry, sheep and goats. Formerly there were wild cattle on the island, now extinct since some years.

To the south of Songo-Songo are the rocks of Kiruani. On the small island of Fanjove, which is straggling and bush-covered, there is a lighthouse. Fanjove forms the southernmost island of the Mafia group.

We now turn to the small islands to the north of the main island. These are Nyororo, Shungumbili, and Barakuni. They are waterless and uninhabited. Nyororo is sandy, as is Bwejuu, the remaining two are of coral rock. On all three islands, there grow bush and casuarinas. The fauna are rats and wildfowl, consecrated to the local spirits. Fishermen live on the islands temporarily.

For some centuries, people have lived on Koma, a round island, scarcely visible from the African coast, lying opposite Kifmangao. The name is derived from "Ukoma", leprosy. Tradition states that two Shirazi brothers migrated formerly to Kisiju, where they founded a home, the ruins of which are preserved to this day with some graves. One of them was attacked by leprosy, and crossed to Koma, where he recovered.

Koma is surrounded by mangroves, behind which lies coral land some 2 to 3 metres high. Only on the north is there a sandy beach, where dhows anchor. With the exception of a small sandy stretch in the north-west, the whole island is rocky, but not barren. There are no trees except a few baobabs. The palms of the village are visible from all sides of the island. The village contains nearly 300 huts of Swahili style. Wood and makuti are brought from the mainland for the erection of these. The place is kept clean, and the huts have yards enclosed with tall mtama reeds, inside which grow palms, pomegranates, bananas, and sufi trees. In the open spaces there are benches. Near the small village mosque there is a brackish well. A better well lies about 100 paces away from the village, towards the north-west shore. It is not deep and feeds a large coral basin, in which there is always an abundant supply of clear fresh water, which supply is not dependent on the tides. In the sandy soil on the north-west cape, there is another well of good water, but this is not used.

Near the first mentioned well there are, in the bushy groves, some Shirazi ruins. These are the remains of an extensive settlement with walls of quarried stone and trimmed doorways. There are no windows, but neat cavities trimmed in the Saracen style. Near this place there are two walled graves. Formerly these contained Arabic inscriptions, not understood by the natives. One of these was removed by the captain of an English blockade ship, and the other by the Governor von Schele at the time of the Kilwa unrest. The natives ascribe these buildings to the Wadembali.

Seventy years ago, the natives lived around the well, near this erection, where they bury their dead even today. During the slave raids by the Arabs and Gunya, they withdrew to the place they now occupy, finding protection in the neighbouring mangrove belt. In former years the population of Koma was greater than it is now. Forty years ago, a certain disease, a kind of paralysis of the neck, crippled many of them. At present there are on Koma some 200 inhabitants. They call themselves Shirazi, and claim descent from Jibondo; actually they are the result of intermarriage by coast-dwellers, immigrants from Mafia, and slaves of the hinterland, who have lived here for several generations. They are connected by marriage with the people of Kwale. Almost all are seafarers, and as *nahodhas* make long journeys into the Indian Ocean. The women are very timid, and flee at the approach of a European.

The inhabitants of Koma plant *mtama* of which crop plantations are found scattered over most of the island; *simsim* and maize are also cultivated. They keep poultry, ducks, and pigeons, and some goats and sheep, and some twenty head of young but healthy cattle. The last mentioned always live in the open. Shelters have been erected for the goats, as if they are left in the rain and manure, foot-rot results. Large pythons often take lambs, but more loss is caused by the rats which even climb the palms and attack the nuts. Ants are not so abundant here as they are in Kwale, but there are many *Achatina* snakes. Mangroves do not do well, and the palms yield poor fruit.

Koma is constitutionally a republic. The president is the present school-master, who gives Koranic instruction, recites prayers in the mosque, and performs marriage ceremonies. Half the male population of Koma is always at sea, the remainder help with the agriculture and fishing; the women grind flour and weave mats. There are no shops on the island, all necessities of life which do not grow locally being brought by dhow from the mainland or Zanzibar.

On the same ridge, and approachable at low tide is the small island of Pemba Juu (Outer Cape), which is covered with low scrub. The outermost rock is called "*Kijibwe mtu*". It is believed to be a woman who was turned to stone, because, despite being forbidden, she went to bathe in the breakers on New Year's Day, and as a punishment was thus transformed, with a child on her back. The same story is told of a rock near Pangani, "*Mwana Tunguja*".

North of Koma lies the uninhabited, waterless island of Hatamburwa, which is also called Hatajwa. The latter denotes "*Unmentionable*", for it is not good to make any mention of this island, surrounded by the ridge, till one has passed the place. It is bush-covered, and its edges are undermined by the sea. Many herons and storks come there.

The island of Kwale is situated opposite the mainland, separated therefrom by a channel which has a strong current. The name means "*Partridge*"; it seems that bird may have been found there formerly, for which reason the place

is called Kisiwa cha Kwale, Partridge Island. This island runs from east to west, its length being three times its width. The western part of the island is flat and sandy, on which lie the Customs house and village. Towards the east, it changes into a coral plateau, several metres high, sloping down to the sea. At the foot of this plateau is a mangrove belt. Huge baobabs are a characteristic of Kwale, of which tree gigantic specimens are scattered throughout the island. In the sandy part there grow attractive mango trees, and there is thick euphorbia bush, the juice of which is used by the fishermen to stupefy fish. The coral plateau, though stony, is not barren, and has much red soil. This place has many mtama plantations, in which there are baobab, mango, and tamarind trees. Coconut palms do not do well, there are scarcely a dozen on the island, the reason being that the seedlings are ruined by the larvae of the rhinoceros beetle. Pumpkins and other vegetables suffer from the attacks of insect pests. During the harvest, pigeons and guinea fowl flock here, but partridges, after which the island is named, are now extinct. The place is notorious for its large swarms of ants; on the plateau is found another species which bites, and it is necessary for the cultivators to wind pieces of cloth round their legs when working in the plantations. Smaller ants are plentiful in the sandy parts, and there is no shortage of white ants.

In Kwale there are two wells; one, situated in the village, gives very salty water, which is only used for cooking, the other, lying on the plateau, is very deep and yields slightly brackish, but drinkable water. It was sunk in Shirazi times, and for many years was filled up with earth, while the inhabitants fetched their drinking water from Kisiju, on the mainland. At last an Indian cleared it systematically, and was successful in his object. The original digging is ascribed to the Wadebuli. These people have left some stone buildings and tombs, which are to be seen on the western side of the island, not far from the Customs house. A small mosque of Shirazi architecture attracts attention. Besides these are to be seen a number of graves with castellated walls. A few are of trimmed stone, while others have only a stone plaque or a board, to show they are graves. The natives attribute the last mentioned to their ancestors. There are very few legible stones; one, which is dated 1663, bears the name Munyishummu bin Munyishomari, which is certainly a Swahili name.

Kwale village contains some hundred huts with grey mud walls, makuti roofs, verandahs, and yards of mtama straw. Large and small huts are jumbled together, in the shade of baobab trees. As to monumental buildings, there is only one small stone mosque, a hundred years old, and some ruined walls, which formed part of better built houses. Before the digging of the well, the population of Kwale was small; these were chiefly Swahili similar to the Wambwera, and originated from Koma and Jibondo. Then came an immigration from the mainland, chiefly of Wandengereko. Today the population totals some 500 persons, including the slaves of mixed race, who come from the Kilwa hinterland. Almost all free males are seafarers; Kwale crews have a good reputation, and there are many able Nahodhas there. During their short stays on the island, they spend their time fishing.

Cultivation is left solely to the women and slaves, who leave in the early morning for the plateau, and work hard there. Besides this, they weave good mats, the ukindu for which is brought from the mainland. An Arab has a small shop here, and two Hindus work as Customs clerks. Chief among the people of Kwale is a Jumbe, assisted in his duties by a recently appointed Akida. Both

are honest men, and the inhabitants of Kwale are a friendly and cheerful people. It is a very happy sight to see a large number of grass widows assembled near the well in the evening, and later returning to their village carrying earthen pots on their heads, singing songs.

At the west end of the island, situated amongst tall baobab trees is the Customs house, exposed on all sides to the sea breezes, where there is a German supervisor (at the time of my visit Mr. Paul Ziegenhorn) with a Hindu clerk. On this island this German official leads his lonely life; he is in some measure compensated by the advantage of having a healthy climate.

Kwale is exposed to the sea breezes, and is free from fever. It is strange to note that this place has a very small rainfall, and there is no morning dew. Moreover, there is almost daily communication with the coast, Dar es Salaam and Zanzibar, whence tinned provisions can be obtained. As one sits on the airy verandah of the Customs house, gazing at the sea with its green islands, and the distant outline of the mainland, one cannot help thinking the supervisor the most enviable of men. As he has much work, he requires such a place to rest from his worries, as apart from the daily local traffic from Kisiju and Koma, he has manifold duties to attend to, as all vessels from the small coast places as Kifungao and Msindaji call at Kwale to pay duty. Besides this, all dhows coming from Simba Urunga and the south, anchor here to re-provision and obtain a few days' rest. Many Nahodhas have their families there, and others, especially those from Zanzibar, have a strong affection for the obliging grass widows mentioned above. A number of large and small sailing vessels always lie in the harbour, and Customs formalities and observing the sections of the Brussels Agreement relevant to slavery, entail much work in the Customs house. Both the islands of Chokaa lie on the same ridge as Kwale, and can be approached on foot at low tide. They have eroded edges, with deep clefts and chasms. On the coral rock there grow freely thick bush and all kinds of grassy plants and creepers. Beneath them are to be found trees of the euphorbia species. The last mentioned variety is not found on Kwale. Formerly both these islands were cultivated by the people of Kwale, but today they are considered to be the home of the Devil "Pepo ya Rewa", who comes in a flaming cloud from Hatamburwa and Pembe Juu. Besides this evil spirit to whom offerings of potsherds, etc., are made, there lives on the island a mad female slave who subsists on crabs and wild fruits, often bringing a load of mangrove wood into the village to exchange for mtama. She is said to be in search of her child who was sold a few years ago in Zanzibar, and thus she wanders lamenting day and night in the mangrove swamp and coral rocks.

The northernmost island of the Mafia group is North Fanjove, a flat, waterless tract with many casuarinas and bushes, where there are many rats. On the neighbouring ridge there are some especially beautiful sea-snakes, the skins of which are exported via Kwale.

In concluding our description of the Mafia group we must consider the financial value of the country. We have to admit that the main island of Mafia is a beautiful and promising part of the German Colony. It is true that it does not possess the overpowering tropical luxuriance of Pemba, or even of Zanzibar, but it has the inestimable advantage of a healthy climate over these islands. Though Mafia and Chole are not altogether free from malaria, they may yet be reckoned among the healthiest places in East Africa. The soil of Mafia is not

so clay-like and red as that of the northern islands, but Mafia has an abundant water supply, and its sandy soil is well suited to the cultivation of the coconut, which is a source of wealth for it. Owing to this industry, cattle breeding, a good labour supply, Mafia is financially far sounder than either Zanzibar or Pemba, where, with the falling price of cloves and the shortage of labour, the English have only kept the native planter's head above water by systematic connivance in the slave question.

Hitherto Mafia has been the step-child of East African colonial administration, which has always had its hands full, and a very isolated branch of the extensive Kilwa District, entirely in the jurisdiction of a coloured Akida. It is gratifying to note that the Governor, Von Wissman, has directed his attention to this island, and is about to make suitable changes in its administration.

With regard to the smaller islands, especially Kwale, Koma, and Songo-Songo, these places are not of financial importance; they are, however, of great value if used as a sanatorium for persons living in malarial districts.

NOTE ON MAPS

The sketching of maps of Mafia and the small islands was rendered easy as the English charts gave a reliable basis, which made astronomical calculation unnecessary. As the islands are very flat, and give no good views, triangulation was out of the question; topographical directions were followed carefully whilst mapping the routes, which were inserted in the charts after taking numerous soundings.

The routes were sketched in accordance with the method usually used at the Vienna Academy of Military Geography, which I detailed fully in my publication *Topographical Notes on Journeys* (Notes on German Protectorates, Vol. VII, Berlin, 1894).

The traverses agreed well. Barometrical altitudes were unnecessary, as the Niveau differences are so small that they fall under error margins of the measurements.

Editor's Note.—Unfortunately it is not possible to reproduce the original maps referred to in this note.

THE HEHE ROYAL GRAVES

By Dr. Stierling

Translated by W. J. Carnell

(NOTE: The article which follows appeared in *Mitteilungen des Seminars für Orientalische Sprachen an der Universität Berlin, Jahrgang 2*, 1899, to which acknowledgment is made. In view of the recent return to the Territory, through the exertions of His Excellency the Governor, of Mkwawa's skull from Germany, and the consequent righting of an ancient wrong, it is felt that this account of the family graves of the dynasty deserves resuscitating, both for its intrinsic interest and for the light which it unwittingly casts on German-Hehe relations at the end of the last century.

Owing to the unavailability for reference of von Nigmann and other authorities, it is not possible to supply any biographical material, if such exists, relating to the author, who was a senior medical officer in the German force engaged against Mkwawa. Like his near contemporary Heinrich Claus, author of the monograph *Die Wagogo*, 1911, his duties as a medical officer would appear to have afforded him sufficient leisure for him to interest himself in the peoples of the Territory.

The photograph which is referred to in the text, and which, unfortunately, it is not possible to reproduce, shows, in interesting detail, the upright and fallen elephant tusks at the graves, and the surrounding bower of trees. For a photograph of a grave of the type described, see the Note, "The Grave of Ngaonalupembe, Chief of the Wahehe Area, 1800-1820", in *Tanganyika Notes and Records*, No. 30 (1951).

With the death of Kwawa, the last chief of the Hehe, the seven-year long resistance of this intrepid and stubborn mountain people against German rule has come to an end, it is to be hoped for ever. This, unfortunately, at the same time dooms them as an independent tribe. The small remnant of men of pure Hehe blood who still survive will not be able to retain their individuality. They will become intermingled with other tribes, and, instead of remaining fearless warriors and hunters, will degenerate into mere porters like most of the other natives of our Colony. Their political organization, in particular the chieftainship, is, by and large, impossible under German rule, and even if the chieftainship were maintained, as was originally intended, it would be merely a pitiful simulacrum of its former power and ancient glory. The old ancestral homes of Kwawa and his great Wasagira lie almost without exceptions in ruins. The stores of ivory and herds of cattle which constituted the riches and pride of the Hehe are destroyed. Most important of all, war, for which every Hehe was trained and for which he lived, is now a thing of the past.

In these circumstances, it would appear to be the duty of all who have had the good fortune to amass experiences both of this notable struggle and of the numerous peculiarities and customs of the Hehe to record them for posterity.

It has been emphasized by every author who has hitherto written of Uhehe that its inhabitants appear, in almost all respects, to be of nobler stock than the other indolent and faint-hearted tribes of East Africa. It is, in fact, true that

many traits which are peculiar to the Hehe are to be observed, as, for example, the closer solidarity of the family and the great authority of the elders; their love of country and of freedom, and the reverence with which the dead are treated and their memory preserved.

While other tribes generally carry their dead into the bush and leave their obsequies to the hyena and vulture, the Hehe usually bury theirs. Only among the poor, and again in time of war, is the simpler procedure followed. Also unique in East Africa is the way in which the graves are laid out and adorned, and this is especially true of the ancestral graves of the Kwawa family at Rungemba.

Rungemba, the ancient home of the Hehe chiefs, lies on the slopes of a huge, wide, circular valley which gives rise to the head-waters of the Ndembero, a tributary of the Great Ruaha. The old tembe is now entirely destroyed. It lay twelve hours' march south-west of the capital, Iringa; was of medium size; constructed according to the usual rectangular pattern, and contained several separate houses in the inner courtyard. One of these was of unusual height, its roof supported by three rows of poles, and this belonged to the chief himself. To the north and east, the tembe was surrounded by the stunted bush country which is typical of Uhehe. To the west and south, broad fields of maize and millet ran down to the swampy valley bottom, home of the grey reedbeek.

Here, in open country, a few minutes distant from Rungemba, lay the now desecrated burial-ground of the Kwawas. The appearance in this bare, treeless area, of the fine clump of green, leafy trees which bounded it was quite breath-taking, like that of an oasis in the desert. The trees were planted in oval fashion, contiguous to a fence, and the latter was as far as possible removed as soon as the trees had grown enough for them to protect the enclosure. A living palisade had thus grown up, formed of trees intertwining one with another, whose tops cast a deep shade over the interior. There was only one gap in it, serving as a doorway, and this was usually kept barred by transverse poles. On entering the inner enclosure, one was struck by the cool shade, in pleasant contrast with the burning heat outside. When I set foot in the burial-place for the first time, in November, 1896, all the trees were in full foliage and a solemn twilight prevailed in the interior. Later, when I took the photograph, this living hedge was partly bare and sufficient light filtered through to make a photograph possible.

The shape of the interior enclosure, forming the actual burial-ground, was that of a rather irregular rectangle of about twenty metres in length, and in breadth amounting to about seven metres in the middle and somewhat less at the ends. A large number of trees, young and old, formed with their tops a green roof which the surrounding trunks carried like pillars. Among them, singularly beautiful, was a wild figtree, perhaps the only one that already stood on this spot before the burial-ground was laid out, and which may well have occasioned the choice of this particular place. The burial-mounds were flat; all were arranged roughly parallel across the breadth of the enclosure, and numbered sixteen. In the case of one of these, however, it was not possible to ascertain whether it had been cut in two by the washing away of a strip in the middle, or whether it consisted of two children's graves, laid end to end. If the latter were the case, this would make seventeen graves. Even apart from this uncertainty, most of the graves were probably those of children.

Without exception, the individual graves were each surmounted by an elephant tusk, stuck upright in the earth, but some of these had crumbled away and broken off, and lay scattered around. It can be safely asserted that, at the time when I first arrived at Rungemba, no damage that was malicious had ever been done to the tusks. It did, however, appear that they were to be regarded more as an offering to the dead than as a formal memorial. Apart from the tusks, there was only a scrap of white cloth hanging on the trees over the grave of the ancient Kwawa, Mjugumba, and probably denoting the same sort of sacrifice. It could possibly have been, however, the remains of the complete roof of cloth which, according to unsubstantiated information, once overshadowed the whole burial-place, while the trees were still small.

The shape of the individual graves is clearly visible in the photograph. A number were about the length of a man, and fifty to sixty centimetres wide; the majority were much smaller and shorter, and appeared to be children's graves, a supposition which was corroborated by enquiries made. I am therefore led to believe that the burials were predominantly those of children, but, if this is to be ascertained beyond doubt, now is the time to do so, after the death of the redoubtable Mahinja, as the inhabitants of Rungemba may be ready to explain things which, through superstitious awe, they refused to disclose during his lifetime. But this much at least is clear, that only members of the Kwawa family were buried there. The Msagira of Rungemba, Mbanamutua, a Hehe of high rank, was positive that his own ancestors did not lie there. Judging from the condition of individual graves, a number were older than Mjugumba's. These, however, must have housed women and children, since it is accepted as a matter beyond controversy that it was Mjugumba, the founder of the Kwawa dynasty, who first had the burial-ground laid out.

For a considerable time, we German conquerors of the land cared reverently for this impressive burial-ground, fitting resting-place of monarchs, but at a later period, unfortunately the tusks were hauled away, and finally the order was given to raze the whole enclosure. This was done with a view to dealing a blow at the fugitive Kwawa's prestige, and, even more, to shatter the illusion that we were afraid to lay hands on his family sanctuary. However regrettable the destruction of this unique place may have been in other ways, it at least afforded me an opportunity for a closer examination of the graves. I had one opened up; to be exact, that of Mjugumba himself. It did not differ outwardly from most of the others. The operation was by no means easy, as the grave had been packed down extraordinarily hard with clay and stone, and, in addition, was breast deep. The skeleton did not lie immediately under the mound, but in a small cavity to one side. This is the same fashion as that in which our Sudanese askaris bury their dead, and it may perhaps be attributed to Arab influence. It is really a most interesting question as to how far Arab influence, together with that of the Zulu tribes to the south, affected the setting up of the Kwawa kingdom and the adoption of many customs which, it may definitely be asserted, were unknown to the ancestors of the Hehe, the Wasagara.

The ancient Kwawa's skeleton lay alone, with the head pointing somewhat north-east. Neither weapons nor personal ornaments appeared, and there were no skeletons of women or slaves who had been offered up at the chief's death. With regard to the skull, Professor von Luschan was good enough to inform me that it had belonged to a man of about forty years of age. Its characteristics

and measurements corresponded fairly well with those of a skull which I had submitted at the same time, belonging to a half-brother of the Kwawa recently ruling, so that it can be taken as highly probable that the skull in question is really that of the old Mjugumba. The burial-mound was also pointed out to me several times as being the authentic one, although most of the Hehe persisted in saying that they knew nothing about it. It was, no doubt, superstitious fear which sealed their lips. Whenever I and others tried to inquire more closely into the ceremonies at the burials and so on, one heard reiterated the single obstinate reply, "I don't know." I myself was Commandant of a military post at Rungemba for over a month, but, in spite of this, I did not succeed in getting the stiff-necked Hehe to disclose any information. It was said that every month, at the full moon, the fugitive Kwawa Mahinja used to come to Rungemba to bring offerings to his father's grave, and that this actually took place while I was there. Others, on being questioned, particularly the above-mentioned Mbana-mutua, denied this. The only thing that is certain is that Kwawa's sorties did coincide, in their timing, with the full moon. If the chief's presence at his father's grave on these occasions was a fact, he could well have been praying for success on his raiding expeditions.

This success in war, which so often blooded the bright spears of the Hehe, has departed for ever. Kwawa Mahinja is dead by his own hand, after wandering around like a hunted beast in his own country for two whole years. His brother Mpaugire and four of his half-brothers have died on the gallows. His sons have been sent to the coast, where home-sickness and the hot, unhealthy climate will soon carry off these children of the high mountains. The death of Zelewski and his comrades has been terribly avenged, and bloodily has Kwawa's repeated treachery been punished. The Hehe kingdom, with its barbaric splendour, is no more. But Uhehe will, under German leadership, take on new lustre when German settlers begin to bring forth the hitherto unsuspected treasures which those glorious highlands at present conceal.

RECORD IVORY IN THE COLLECTION OF THE BRITISH MUSEUM (NATURAL HISTORY)

By J. E. Hill

(Department of Zoology)

The British Museum (Natural History) is fortunate in having, among its collection of ivory, record specimens of the tusks of both African and Indian elephants. Such specimens are of interest to sportsmen and naturalists alike and since the complete history of the African tusks has become known only recently and the possibility of tusks of comparable dimensions being taken in the future is very remote, it was thought that a record of the relevant data would be worthwhile for future reference.

It is perhaps to be regretted that for record purposes the tusks of elephant are classed by length rather than by weight. Thus it is that a pair of tusks of no outstanding weight hold first place in Rowland Ward's Records for the African elephant. These tusks are at present in the United States National Collection and are 11 feet 5½ inches and 11 feet in length, 18½ inches in girth and weigh together 293 lb., i.e. an average of approximately 146 lb. per tusk. A glance at Rowland Ward's list will show that these tusks are outweighed by numerous shorter but more massive tusks taking places as low as the fortieth in the Record. There seems a good case for the use of a formula combining length, girth and weight in grading tusks for record purposes, thus giving the short, massive tusk a comparable value with the long but relatively much thinner specimen.

Two tusks believed to be the heaviest ever known, and certainly the heaviest ever recorded, were sold at Zanzibar in 1898. Both are now in the collection of the British Museum (Natural History) and there is every reason to think that they are a pair: they are listed in second place in Rowland Ward's Records (1935). It is said that they came from an elephant killed near Kilimanjaro by an Arab hunter after he had been trailing it for several weeks. One, the heavier, was bought by the British Museum (Natural History) from Messrs. Landsberger, Humble and Co. for £350. This is a massive tusk, 10 feet 2½ inches in length, 24¼ inches in girth and weighing 226½ lb. The other tusk, now mounted on a plinth with that just described, was bought by Mr. William B. Hatfield, ivory buyer for Joseph Rodgers and Sons, Ltd., Cutlers, of Sheffield. It was exhibited in the entrance hall of the firm's showrooms at Norfolk Street, Sheffield, and later at their Pond Hill Works, Sheffield. In 1932, this tusk was sold to W. B. Wolstenholme, Ltd., of Sheffield (now no longer in business) who sold it, through Rowland Ward, Ltd., to the British Museum (Natural History) in 1933. A photograph of the tusk in a commemorative booklet issued by Joseph Rodgers and Sons, Ltd., in 1912, establishes beyond doubt the fact that the tusk now in the British Museum (Natural History) is the one originally in their possession. This tusk is 10 feet 5½ inches in length, 23½ inches in girth and weighs 214 lb. The two tusks are not symmetrical: the right one, the shorter, heavier tusk, was evidently the working tusk at the time of death and is a smoothly curved specimen of normal shape. The distal third of the left tusk curves in towards its fellow, and in life the tusks most probably nearly met at the tips. The inward curvature to effect this, however, is confined almost entirely to the left tusk.



Record African Elephant Tusks in British Museum (Natural History).
The scale is set at six feet for comparison.

The African specimens recorded in the possession of His Majesty King George V in the 1935 edition of Rowland Ward's *Records of Big Game* are now housed in the collection of the British Museum (Natural History).

The tusks listed in first place in Rowland Ward's *Records* for the Indian elephant are now in the British Museum (Natural History). They are 8 feet 9 inches and 8 feet 6½ inches in length, 21⅞ inches and 22 inches in girth and weigh 161 lb. and 160 lb. respectively. They are the property of the Crown and were formerly housed in Buckingham Palace. The elephant from which they came was taken in the Western Terai Jungles.

I am indebted to Mr. D. A. Palmer, Managing Director, Joseph Rodgers and Sons, Ltd., and to Mr. J. C. Fisher, a former employee of this concern, for information concerning the record African specimen.

THE HABITAT-DISTRIBUTION OF BIRDS OF NORTHERN, EASTERN AND CENTRAL TANGANYIKA WITH FIELD KEYS

*PART IV—BIRDS OF THORN-BUSH

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

This habitat covers the greater part of Ugogo and other parts of the Central Province, parts of north Kilosa District and a large part of Same District and the country in the rain shadow of the Usambara Mountains. It is also to be found in the Rift Valley of the Northern Province and in parts of Masailand. It broadly comprises the areas of lowest rainfall in the Territory, often below 20 inches per annum, and liable to recurrent drought years when the rainfall may be below 15 inches. For the most part this country lies between 2,000 feet and 3,500 feet above sea level.

Included in the thorn-bush habitat are those areas of dry scrub with trees, with no canopy, and consisting of open or closed assemblies of small thorny bushes with scattered trees, more typical of the semi-arid areas of the northern and north-eastern parts of the Territory; and the more open type of *Acacia-Commiphora* bush which is typical of Ugogo. In both types, but more particularly in the latter, large areas of deciduous thicket are to be found, with *Acacia* and baobab trees scattered in the thicket, succulent plants such as *Sansevieria* forming often dense stands within it. In the thorn-bush, grass is sparse and ephemeral and for a large part of the year the ground is bare.

Although the dry scrub and the deciduous thicket are botanically distinct, the birds of both habitats are included in this section, as the thicket holds only a few birds which are not to be found in the more open dry scrub, and the two habitats form a sufficiently good whole to be treated in this way.

The arid aspect of this habitat for the greater part of the year might lead one to expect that it would be highly unattractive to birds. In fact this semi-arid country and the closely allied dry scattered-tree-grasslands of the Northern Province (to be dealt with in a separate section) hold a larger number of species than any other habitat in the Territory, and are ornithologically most attractive. Among the reasons for this wealth of species may be the fact that the major thorn-bush habitat itself is made up of a greater variety of minor habitats. There is more open ground, which is attractive both to ground birds such as plovers and larks, and to raptors. There is a good supply of seeds of various kinds, which are not destroyed by fire, while the scrub and trees supply large foraging areas for insectivorous birds, as well as giving innumerable nesting sites. Then, too, most of the thorn-bush country is inhabited by considerable numbers of game animals, while most of it carries large herds of cattle, which are accompanied by flies and carry ticks, providing food for insectivorous birds of which there is a considerable number in this habitat.

*Parts I, II and III of the field keys, covering the Seashore, Towns and Cultivation, and Deciduous Woodland and Bushland, have appeared in *Tanganyika Notes and Records*, Nos. 33, 35 and 37 respectively.

A typical aspect of the thorn-bush country is bare red soil, scored by cattle tracks, with scattered umbrella-topped acacia and baobab trees, more frequent yellow-green barked *Commiphora* trees and a varying density of small thorn-bushes between them. Generally, visibility is good and bird observation easy, except in the denser stands of thorn and thicket. With the first heavy rains the aspect changes almost miraculously, as trees and shrubs rapidly come into leaf and the ground becomes green with a mixture of annual grasses and herbs, and wild flowers soon become abundant. The nesting season for many ground birds and most of the smaller bush and tree nesters lies within the months of December to May, during the rains.

The thorn-bush contains many characteristic bird species, among the most notable being the following: Vulturine Guinea Fowl; White-bellied Goaway-Bird; Van der Decken's Hornbill, with its particoloured red and ivory bill; Blue-naped Mousebird; Red-and-yellow Barbet; Scaly Chatterer; Banded Tity-flycatcher; Buff-bellied Warbler; White-crowned Shrike; Long-tailed Fiscal Shrike; Rosy-patched Shrike; Wattled Starling; Golden-breasted Starling; Hildebrandt's Starling; White-headed Buffalo-weaver; Speckle-fronted Weaver; Black-necked Weaver; Black-cheeked Waxbill; Blue-capped Cordon Bleu; Purple Grenadier; and Grosbeak Canary. Probably the most numerous species are doves, in which this habitat abounds. Brightly coloured birds are also probably more numerous in this habitat than in any other.

In previous sections a complete list of the birds in the habitat was included. In order to save space this list is omitted from this section, at the Editor's request. Migrant birds from the Palaearctic region are marked with (M) in the key, and those more particularly to be found in thicket with (Th). Birds confined to the north-eastern parts of the Territory are marked (NE).

FIELD KEY

MAIN DIVISIONS

I.—No red, violet, blue, yellow or green in plumage:

A. Upperparts brown, from drab to chestnut	...	...	...	p. 34
B. All-black plumage	...	...	...	p. 41
C. Black-and-white plumage	...	...	...	p. 42
D. Black-and-buff plumage	...	...	...	p. 44
E. Slate or dove-grey upperparts	...	...	...	p. 45
F. Pale brick-red plumage	...	...	...	p. 47

II.—Some red, violet, blue, yellow or green in plumage:

A. Red in plumage	...	...	...	p. 47
B. Violet in plumage	...	...	...	p. 50
C. Blue in plumage	...	...	...	p. 50
D. Yellow in plumage	...	...	...	p. 52
E. Green in plumage	...	...	...	p. 57

Note on using Key:

A full note on how to use the key is contained in Parts I and III of the keys.

Volume II of "Birds of Eastern and North-eastern Africa" has become available since Parts I—III were published. The English names now used are those to be found in that book, and do not always correspond exactly with names used previously.

I.—NO RED, VIOLET, BLUE, YELLOW OR GREEN IN PLUMAGE

A. UPPERPARTS AND WINGS LARGELY BROWN, ASHY OR DRAB TO CHESTNUT.

a. Entirely brown plumage.

ai Large birds of prey.

aii Head and neck feathered; bill average; hooked. Tail rather long, forked *Kite*.

bii Head, neck and throat unfeathered; bill long and hooked. Plumage chocolate brown; bare face, red *Hooded Vulture*.

bi $\pm$ thrush-size.

aii Tail very long and narrow; bill black.

Above and below ashy-brown; flight feathers darker . . . *Ashy Starling*.

bii Tail normal; bill coral-red.

Ashy-brown upperparts and chest; sandy or rufous-buff abdomen
Red-billed Oxpecker.

b. Entirely brown plumage except for white back seen when wings are open; large birds of prey.

Head, neck and throat unfeathered; covered mainly with grey down; bare parts black; general colour pale brown . . . *White-backed Vulture*.

c. Upperparts mainly brown; underparts various.

ai Conspicuous black in plumage, either on tail, head or underparts; often as a band or ring on throat or chest.

aii Black forming conspicuous ring on chest.

aiii Long-legged birds, about pigeon-size.

aiv One black band on chest.

av Legs red.

Crown black surrounded by white ring; black line above eye to back of head; flight feathers black; chest pale brown with broad black band below; rest of underparts white *Crowned Plover*.

bv Legs black.

Conspicuous patch of white on forehead; crown and upperparts brown; flight feathers black; rump and tail white with broad black band; head, neck and chest grey with broad black band on chest; rest of underparts white *Senegal Plover*.

biv Two narrow black bands on chest.

Above mousebrown, with black and buff markings; much tawny in wings; white band at base of tail; below buffish white *Two-banded Courser*.

biii About sparrow-size.

Crown black with white forehead and eyebrow; black band from bill through eye; marked white rump; tail partially white with black tips; underparts white with broad black band on chest *Capped Wheatear*.

bii Black not forming conspicuous ring on chest.

aiii Wholly or partially black tail.

aiv Tail entirely black; no black in wings.

av Pigeon-size; tail long and square.

Prominent white eyebrow; crown streaked dusky and white; wings rufous; underparts buffy white
White-browed Coucal.

bv Small dove-size; tail very long and narrow.

Throat and chest black; rest of underparts white; crown grey; bill red; two black bands across base of tail *Namaqua Dove* (Male).

cv Sparrow-size.

Crown, face and tail jet black; rest of upperparts drab brown; underparts white with few splashes of dark brown on breast; bill white . . . *Black-capped Social Weaver* (NE).

dv Very small.

Black sides of face; chin and upper throat spotted white; conspicuous grey crown and neck, and white rump; grey collar on chest; rest of underparts cinnamon brown *Grey-headed Silverbill*.

biv Tail partially black.

av Conspicuous white rump; sparrow-size.

White patch above and behind eye; black line below eye; broad black band on end of tail; wings black; underparts pale buff *Wheatear* (M) (Male).

bv No conspicuous white rump.

avi Crown and nape grey; sparrow-size.

Back rufous, rump grey; central tail feathers black; others with white bases and black tips; underparts pale pink *Red-backed Shrike* (M) (Male).

bvi Crown and nape not grey; small thrush-size.

Broad white eyebrow; narrow black band through eye; central tail feathers dusky, remainder black, with broad white tips; wings cinnamon; underparts buff or pale grey *Brown-headed Bush-Shrike*.

biii Black confined to head and/or underparts; no black in tail.

aiv Black on head and underparts.

- av Central tail feathers very much elongated.
- i. Head and upper breast glossy blue-black; back, wings and tail bright chestnut; underparts dark blue-grey *Paradise Flycatcher*
Chestnut phase (Male).
 - ii. Back, wings and tail white *Paradise*
Flycatcher White phase
- bv Tail short.
- avi Sparrow-size.
- Forehead and crown rufous; upperparts streaked darker; pale rufous collar at back of neck; ear coverts white; front of face, broad eyebrow, centre of throat and sides of neck black; rest of underparts white with black line down centre
Fischer's Sparrow-lark (Male).
- bvi Very small.
- Forehead, sides of face and throat black; upperparts greyish brown; tail dusky, tipped white; underparts barred white and brown; centre of belly russet; rest white; bill red or black and red *Quail-finch* (Male).
- biv Black on head only.
- Very small; forehead and crown black with small white spots; back of head and nape rufous; line of black on side of face below cheeks; underparts ash-grey *Speckle-*
fronted Weaver.
- civ Black on underparts only.
- av Very large, eagle-like.
- Entire upperparts and head dark brown; neck and chest very dark brown, appearing black in field; rest of underparts white *Black-chested*
Harrier-Eagle.
- bv Sparrow-size.
- Upperparts greyish brown; streaked; underparts white washed tawny; black line down centre of abdomen
Fischer's Sparrow-Lark (Female).
- bi Black, if any, restricted to tips of tail feathers, in flight feathers, as two bars on lower back, or as spots on breast or in mottled plumage.
- a ii Conspicuous slate-grey or grey on head or tail or underparts.
- a iii No grey on underparts.
- a iv Head, neck, lower back and tail blue-grey; hawk-like.
- Rest of upperparts rich rufous; wings dark brown; tail tipped white with broad subterminal band of black; underparts buff to rufous-fawn streaked black on chest
European Kestrel (Male).

biv Crown and nape only dark grey; sparrow-size.

Marked white eyebrow; upperparts rufous; wings dusky with conspicuous white lines; tail white-tipped with black subterminal band; underparts white tinged tawny; brown stripes down angle of jaw; breast boldly spotted
White-winged Scrub-Robin.

biii Grey on underparts.

aiv Grey on head and underparts.

av Long-legged, long-necked, large birds.

Crown, neck and chest slatey-blue; above sandy-buff freckled and blotched blackish and dusky-brown; prominent white eyebrow and face; forehead and V-shaped patch on throat black; wings dusky; rest of underparts white. (Female has black crown and biscuit coloured neck) . . . *White-bellied Bustard (Male).*

bv Pigeon size.

Head, throat, chest and abdomen grey; rump distinctly pale ashy-white; back and wings chocolate-brown with numerous white triangular markings; flight feathers dusky; tail with broad black band; neck feathers rufous and mottled . . . *Speckled Pigeon.*

cv Sparrow-size.

Crown slate-grey; underparts ashy-grey; white on chin and throat; above rufous brown; wings and tail dusky; bright rufous on rump . . . *Grey-headed Sparrow.*

biv Grey on underparts only; small sparrow-size.

Upperparts dark greyish-brown; rump feathers soft; below grey with some narrow white bars on abdomen
Grey Wren-Warbler.

bii No conspicuous grey in plumage.

aiii Conspicuous white eyebrow, or white face or white head.

aiv Long-legged birds; bodies dove-size.

Conspicuous white eyebrow, line behind eye, forehead and lower throat; general colour above dark sepia; flight feathers and coverts black, most tipped metallic violet; upper tail coverts white; tail white-tipped; foreneck and chest brown separated by dusky band from white underparts . . . *Violet-tipped Courser.*

biv Legs not noticeably long.

av Conspicuous white head, nape and rump.

Rest of upperparts sepia; line below eye and sides of face dusky; below white with brown patch on either side of chest . . . *White-crowned Shrike.*

- bv White on head confined to strong white eyebrow.
- avi Partridge shape and size.
Crown brown; white eyebrow joining at nape; white line below eye; upperparts brown mottled chestnut, streaked white and buff; throat white; neck mottled; underparts buff, chocolate spots on breast, cream streaks on flanks and underparts; outer tail feathers dusky *Crested Francolin*.
- bvi Small thrush-size.
Above pale fawn; wings, rump and tail rufous; underparts white; throat encircled by broken line of dusky spots; breast and flanks strongly spotted *Spotted Morning Warbler*.
- cvi Sparrow-size.
Above pale rufous brown mottled dusky; pale at nape giving appearance of collar; wing feathers dusky with cinnamon edges; tail dusky, outer feathers with narrow white outer edge; dusky stripe through eye; throat white, rest of underparts pale buff; breast spotted dusky *Fawn-coloured Lark*.
- dvi Smaller than sparrow; tail long and narrow in relation to size of bird.
Upperparts plain sepia; throat white; underparts tawny; tail white-tipped *Tawny-flanked Prinia*.
- biii No conspicuous white eyebrow, white head or white face.
- aiv Upperparts distinctly streaked, mottled or spotted lighter and darker.
- av Legs very long, yellow; body large pigeon-size.
Upperparts pale rufous, crown and nape boldly streaked; rest of upperparts boldly barred and spotted dusky; flight feathers black; chin white; neck, breast and sides of body buff, boldly streaked sepia *Spotted Thicknee*.
- bv Legs not long.
- avi Large bird; owl-like.
Upperparts much mottled lighter and darker; breast and belly barred and mottled dusky; long horn-like ear tufts *Spotted Eagle-Owl*.
- bvi Body dove-size; tail long; head crested.
Above ashy-brown with white tipped feathers particularly in the wing; crown pale grey, crested; tail with white tips; underparts white, streaked buff on throat and chest *Great Spotted Cuckoo (M)*.

cvi $\pm$ thrush-size; tail rather long and square. Plumage much mottled in buffs and greys, with some black; mainly crepuscular.

avii General colour chestnut; white in outer tail feathers confined to tips; smaller.

Crown grey, streaked darker; white spots on flight feathers; yellow markings on shoulders; white band across lower throat

Donaldson-Smith's Nightjar (NE).

bvii General colour above darkish grey and brown; whole of outer web of outer tail feathers white; larger.

Crown grey, heavily streaked blackish; distinct rufous collar on hind neck; white spots on flight feathers and two white bars on wing coverts *Gabon Nightjar*.

N.B.—Nightjars form a very difficult group to identify in the field, making an adequate key almost impossible.

dvi $\pm$ sparrow-size; upperparts streaked.

avii No rufous in flight feathers.

aviii Outer tail feathers white.

Above brown, heavily striped dusky; sides of face and eyestripe pale fawn; wings dusky; chin and throat white; rest of underparts very pale fawn, a few dark brown spots on chest

Singing Bush-Lark

bviii Outer tail feathers with no white.

Crown dark grey; finely streaked dusky; back and wings brown with dusky stripes; wings and tail plain brown; underparts heavily washed cinnamon with spots and blotches on breast

Pink-breasted Lark (NE).

bvii Distinct rufous in flight feathers.

aviii Underparts rufous; larger, stocky bird.

Above rufous brown, black centres to feathers; distinct rufous nape; hind neck paler forming indistinct collar; tail dusky edged rufous; throat pale tawny; triangular dusky spots on breast *Red-naped Lark*.

N.B.—In the N.E. this lark is represented by another race which is much greyer on the upperparts and has no rufous nape.

bviii Underparts tawny; smaller.

Above rufous brown with more or less transverse bars of dusky on back; central tail feathers rufous; outer pair paler; breast sparingly spotted dark rufous *Flappet Lark*.

N.B.—These two birds, while alike in colouring, are very distinct in the field, both in habits and appearance: see Field Notes.

evi Smaller than sparrow.

Upperparts greyish-sepia, more or less striped darker; crown distinctly more rufous than back, also striped; underparts white washed grey at sides

Rattling Cisticola.

biv Upperparts plain with no obvious striping or mottling.

av Large Hawk; wings distinctly rufous.

Above brown, head darker; rufous wings with black tips to feathers; below, chin white with central black stripe, and one on each side; rest of underparts tawny brown with some dusky stripes . . . *Grasshopper*

Buzzard.

(M from north of Equator).

bv $\pm$ thrush-size.

avi All underparts brickly-rufous or cinnamon-brown.

avii Underparts rich brickly-rufous.

Upperparts earth-brown; brick-red on underside of wing . . . *Rufous Chatterer* (Th).

bvii Underparts pale cinnamon-brown.

Above brown with slight rufous tinge; throat and breast slightly spotted . . . *Scaly*

Chatterer.

bvi Underparts white with brown patch on breast.

Above plain sepia-brown; rump distinctly paler

Pied Babbler.

cvi Underparts mainly vinous or brown.

avii Crown and sides of face almost black.

Remainder of upperparts earthy-brown; abdomen white; small patch of yellow at vent; head slightly crested . . . *Black-capped*

Bulbul.

bvii Crown grey; forehead white.

Throat and breast vinous; lower back with two transverse bars of black; metallic green spots in wings . . . *Emerald-spotted*

Wood-Dove.

cv Body sparrow-size or smaller.

avi Tail very long, stiff and thin.

Above dull brown; head crested; below dusky to pale ochre, breast finely barred
Speckled Mousebird.

bvi Tail normal.

avii Breast with brown streaks.

Upperparts brown; some white round eye; underparts white, streaked brown on throat, breast and flanks . . . *Spotted Flycatcher (M).*

bvii Breast unstreaked.

aviii Crown rufous; very small.

Above rather pale brown; tail almost black, rather long and narrow, with white on outer feathers; underparts white washed tawny on chest, flanks and abdomen . . . *Red-faced Apalis (NE).*

bviii Crown ashy brown; rather larger.

Above grey-brown, wings and tail darker; small patch of white in wings; underparts white, slightly tinged vinous on breast . . . *Whitethroat (M).*

B. ALL BLACK PLUMAGE EXCEPT FOR SOME WHITE SPOTS IN TAIL OR ON WING IN FLIGHT.

a. Large bird; eagle-like.

Tail very short, appearing almost absent; head, nape, wings and all underparts black; centre of back and tail chestnut; bill orange; feet red; in flight underside of wings largely white . . . *Bateleur Eagle.*

b. Body dove-size or smaller.

ai Tail very long.

aii Bill very long, slender and decurved; body small dove-size.

aiii Bill and feet red.

General colour black, glossed green on head, back and breast; tail graduated with two white spots on most feathers; narrow white bar in wing in flight . . . *Kakelaar.*

biii Bill and feet black.

General colour black, glossed purplish on crown and back; white wing-bar and white tips to most tail feathers
Scimitar-bill.

ciii Bill orange, feet black.

General colour black with deep blue metallic gloss above; no white on wings or tail . . . *Abyssinian Scimitar-bill.*

bii Bill average; body dove-size.

Black with deep-green blue gloss; tail with narrow white tips
Black Cuckoo.

bi Tail not noticeably long; $\pm$ thrush-size.

aai Bill pink or red, rather heavy.

Dull black, showing a little white in wings . . . *Red-billed
Buffalo-Weaver.*

bii Bill black.

aiii Tail distinctly forked.

Upper and underparts glossy blue-black; wings dusky without
gloss *Fork-tailed Drongo.*

biii Tail square.

aiv Deep green gloss on head, neck, back, wing coverts and
underparts.

Occasionally a little yellow in wing; bill yellow at gape
Black Cuckoo-Shrike (Male) (Th).

biv Deep slate-blue, unglossed, generally appearing black in
field *Slate-coloured Boubou Shrike (Th).*

C. BLACK-AND-WHITE PLUMAGE.

a. Large birds.

ai Neck, bill and legs long.

aai Bill and legs red.

Wings black; rest of plumage white . . . *White Stork (M).*

bii Bill brown, legs red.

General colour above black, with green gloss; back, rump and
upper tail coverts white; head and neck metallic green and purple;
rest of underparts white *Abdim's Stork (M).*

bi Neck and legs not noticeably long.

aai Plumage thickly spotted with white.

Top of head featherless with bony protruberance; red at back of
crown; bare neck black *Helmeted Guinea-fowl.*

bii Plumage not spotted.

aiii Tail so short as to appear absent.

(In flight) body black; underside of wings white; tail chestnut
Bateleur Eagle.

biii Tail normal.

aiv White confined to flight feathers.

Rest of plumage black; conspicuous red on bare upper-
parts of throat and round eye; bill rather long, heavy and
black *Ground Hornbill.*

biv All underparts except throat white; eagle-like.

Upperparts and throat black; tail rufous . . . *Augur
Buzzard*

N.B.—All black examples with rufous tail occur.

- b. Rather larger than pigeon-size; tail and bill long; bill decurved.
 - ai Bill wholly red.
 - aii All upperparts and foreneck dark brownish-black.
 Rest of underparts white; tail black with broad white tips; bill with small casque *Crowned Hornbill.*
 - bii Upperparts and neck with much white.
 Top of head dark grey; sides of face and stripe over eye white; sides of neck greyish white; nape, middle back, throat, neck and rest of underparts white; rest of upperparts dark brownish-black; flight feathers black, spotted white, and much white in wing coverts; central tail feathers black, others with varying amounts of white; no casque on bill *Red-billed Hornbill.*
 - bi Bill half dark red, half ivory white.
 General plumage very similar to the Red-billed Hornbill, the darker parts blacker, and the neck and face white *Van der Decken's Hornbill.*
- c. Less than pigeon-size.
 - ai Tail noticeably long.
 - aii Rump and upper tail coverts white; tail long and narrow.
 Head, neck and mantle, wings and tail black; lower back grey; underparts pure white; bar of white in wings and narrow white band near tip of tail *Long-tailed Fiscal Shrike.*
 - bii Rump and upper tail coverts black like rest of upperparts; tail long and broad.
 All upperparts black; underparts pure white; white patch in wing; head crested *Black-and-white Cuckoo.*
 - bi Tail normal.
 - aii No black on underparts.
 - aiii Lower back and rump feathers greyish-white forming large "powder-puff" area.
 - aiv Underparts pure white.
 Crown, mantle, tail and upper back black; wings black with some white edging to feathers *Black-backed Puff-back Shrike (Th).*
 - biv Underparts white washed pale brown-grey across breast and on flanks.
 Similar to the last bird but smaller; pale edges to wing feathers broad, and washed pale brown *Pringle's Puff-back (NE).*
 - aiii Lower back and rump black like rest of upperparts.
 - aiv Sparrow-size.
 Jet-black above with stripes of white; white forehead and stripe over eye; white in wings and in tips of tail; underparts white with broad band of rich chestnut along sides of breast and flanks *Northern Brubru Shrike.*

biv Very small.

Crown grey; white spot on nape and in front of eye; back grey; wings black with white bars; tail and line through eye black; chestnut collar across breast

Chinspot Puff-back Flycatcher
(Female) (Th).

bii With black on underparts.

aiii Black forming broad band on breast; very small.

As for preceding bird, chestnut band replaced by black band
Chinspot Puff-back Flycatcher
(Male) (Th).

bihi Whole underparts except chin black.

Conspicuous white rump; chin white; rest of plumage black; tail slightly forked; wings rather long and narrow
Horus Swift.

ciii Throat and chest black; abdomen white.

aiv Thrush-size; bill red.

Head, nape, shoulders, throat and breast black; back dark stone-brown; wings and tail dusky; tail tipped white; crest of upstanding feathers on forehead . . . *Retz's Red-billed Shrike*.

biv Sparrow-size or smaller.

av Wings very long and curved; tail very short.

All black except for conspicuous white rump and belly *Boehm's Spine-tail Swift*.

bv Wings short and rounded; tail normal.

Upperparts black; white patch on wing; throat and chest black; rest of underparts white; bill black
White-breasted Tit.

D. BLACK-AND-BUFF PLUMAGE.

Tails very long; bodies sparrow-size or smaller.

a. Elongated tail feathers black, broad and tapering; central tail feathers twisted into vertical plane and very broad.

Upperparts and throat black; conspicuous collar of buff and chestnut from nape across breast; rest of underparts pale buff; two vertical tail feathers give fin-like appearance to base of tail . . . *Paradise Whydah*
(Male in breeding dress).

b. Elongated tail feather very narrow, sandy-buff colour.

Forehead and crown sandy-buff; upperparts, neck and shorter tail feathers black; lower back pale brown; neck black; rest of underparts pale buff
Fischer's Whydah.

N.B.—In non-breeding dress these two birds are sparrow-like and very similar to numerous other species of Whydahs and Bishop-birds; field identification is extremely difficult and no attempt has been made to include them in this key.

E. MAINLY SLATE, DARK GREY OR DOVE-GREY UPPERPARTS

a. Underparts partially barred with grey or black; hawk-like.

ai Crown and nape rufous; about pigeon-size.

Upperparts, tail and wing coverts narrowly barred with black; throat white; chest pale chestnut; abdomen barred black on white; legs orange *Red-necked Falcon*.

bi Crown and nape dark slate or grey.

aii Throat and breast buffy-white like rest of underparts.

Upperparts and tail dark slate barred with black; conspicuous black moustachial streak below eye; breast and flanks spotted in broken bars with dusky *African Peregrine*.

bii Throat and breast pale grey; rest of underparts finely barred with black or grey.

aiii Tail black with one conspicuous white bar; large bird.

Upperparts grey with some black spots; flight feathers black; abdomen boldly barred black and white; legs long and yellow; conspicuous yellow round eye *Harrier-Hawk*.

biiv Tail brown with four lighter bars; large pigeon-size.

Conspicuous white rump; upperparts grey; flight feathers black; abdomen finely barred grey on white . . . *Gabar Goshawk*.

b. Underparts not barred.

ai Underparts entirely pure white.

aii Tail very pale grey; about pigeon size; hawklike.

Upperparts pale silvery grey; conspicuous black patch at shoulder *Black-shouldered Kite*.

bii Tail black, more or less barred white; thrush-size; hawklike.

Upperparts bluish-grey; conspicuous white rump and ring round hind neck; flight feathers black, more or less barred white; forehead and sides of face white *Pigmy Falcon (Male)*.

N.B.—The female has the upper back chestnut.

bi Underparts not entirely white; pigeon-size to very small.

aii About pigeon-size.

aiii Tail noticeably long.

aiv Throat and chest grey; breast and abdomen white; face and chin feathered.

Upperparts grey with long dark crest; white patch on wing and black bars across it; white band across outer tail feathers *White-bellied Goaway-bird*.

biv Chest white, rest of underparts pinkish brown; face, chin and upper throat featherless.

Bare parts black; forehead and crest pale brown; rest of upperparts greyish-ash; sides of neck and chest white with pale green spot on chest . . . *Bare-faced Goaway-bird*.

biii Tail normal; Doves.

aiv Black collar on back of neck.

av Sides of head grey.

Forehead, crown and cheeks grey; chin and throat white; nape, neck and chest vinous pink; white edge to black collar; back and tail earthy-brown; wings and most of tail grey; white tips to tail feathers and white margins to outer feathers; iris silvery-white

Mourning Dove.

bv Sides of head vinous like chest.

Crown dark grey; pale on forehead; chin and throat white; black collar partially edged with pale grey; upperparts grey-brown; wings and most of tail grey; broad white margins to outer tail feathers; iris dark brown

Cape Dove.

biv No black collar on back of neck.

Head, neck, and breast vinous; abdomen and vent white; broad spotted collar of black and rufous round front of neck; back greyish vinous; lower back, rump and most of wings grey; flight feathers black; tail dark grey with white edges to most of outer feathers

Laughing Dove.

bii About thrush-size.

Above stone-grey, almost white on rump; wings and tail black, white patch on wing; underparts very pale grey; bill pinky white; bare skin at sides of throat black

Wattled Starling.

N.B.—What are believed to be breeding males develop large black wattles on forehead, crown and throat. I have not recorded them in Tanganyika.

cii Sparrow-size or smaller.

aiii Conspicuous white rump; sparrow-size.

Crown and back grey; wings and lower part of tail black; upper part of tail white; conspicuous white eyebrow and black band through eye; underparts buff

Wheatear

(Male) (M) Summer plumage.

biii No white rump.

aiv Underparts with some rufous.

av Tail normal, often cocked; sparrow-size.

Above slate-grey; tail black; flight feathers dusky; white eyebrow; black line through eye down sides of throat, enclosing white patch on throat; rest of underparts rufous, white in centre of abdomen

White-throated Robin (M).

bv Tail so short that bird appears tailless; very small.

avi Chin and sides of face white; rest of underparts tawny; dark stripe through eye

Crombec.

bvi Sides of face and chin rufous like underparts; no line through eye

Red-faced Crombec.

cv Tail normal to rather long; small; black collar on throat.

Ashy-grey above; white in wing; tail blackish, outer feathers edged white; throat spotted black; rest of underparts white with tawny flanks
Banded Tit-Flycatcher.

biv No rufous on underparts.

av Outer tail feathers white.

Underparts greyish white; rest of tail blackish
Grey Tit-Flycatcher.

bv No white in tail.

Dusky streaks on head; underparts pale ashy grey, throat and centre of belly whitish
Grey Flycatcher.

F. PALE BRICK-RED GENERAL COLOUR.

± thrush-size, very long crest; bill long and decurved. Crest tipped black; black and white striped wings and broad white band across black tail
South African Hoopoe.

II.—SOME RED, VIOLET, BLUE, YELLOW OR GREEN IN PLUMAGE

A. RED IN PLUMAGE.

a. Red on both upper and underparts.

ai Red confined to head, neck and throat.

a ii Very large.

Conspicuous red on bare upperparts of throat and round eye; remainder of plumage black with white flight feathers
Ground Hornbill.

b ii Large; Guinea-fowls.

aiii Top of head bare with red boney protruberance.

Plumage black, profusely spotted with white
Helmeted Guinea-fowl.

biii Top of head crested with black feathers; bare back of head pale blue to greyish-blue.

aiv Face and throat red.

Plumage black, profusely spotted with blue . *Kenya Crested Guinea-fowl.*

biv Throat only red.

Plumage as in aiv but broad collar on lower throat and upper chest unspotted black . *Crested Guinea-fowl.*

c ii Sparrow-size.

Forehead, sides of head and throat crimson; mantle and breast brown; belly white; wings and tail black . *Brown-breasted Barbet.*

bi Red not confined to head, neck and throat.

aii ± thrush-size.

aiii Red on head AND rump.

aiv. Red on sides of head and throat.

av Crown black; black line down centre of throat.

Rest of underparts lemon-yellow; upperparts, wings and tail black, thickly spotted yellowish-white; yellow collar on hind neck; rump and under tail-coverts red *Red-and-yellow Barbet* (Male).

bv Crown red; no stripe on throat.

As for preceding bird *Red-and-yellow Barbet* (Female).

biii Red on head OR rump.

aiv Red spots only on head.

Above brown, tail darker, spotted and barred with yellowish-white; rump lemon-yellow; underparts lemon; black patch on throat; under tail-coverts red *D'Arnaud's Barbet*.

biv No red on head; rump rosy red.

av Black collar on throat.

Above brown; tail, except central feathers, black with white tips; below white, with buff sides; rosy patch below black collar . . . *Rosy-patched Shrike* (Female).

bv No black collar.

As preceding bird, but rosy patch on throat extends to abdomen . . . *Rosy-patched Shrike* (Male).

bii Very small.

aiii Underparts crimson.

Back and wings dark sepia-brown; rump crimson; tail black; sides of face and underparts crimson; centre of abdomen and under tail-coverts black; bill slatey-blue . . . *African Fire-Finch*.

biii Red on underparts confined to chin and throat.

Broad forehead, sides of face scarlet; upper tail-coverts and tail crimson; crown and sides of neck grey; rest of upperparts olive-green washed golden; underparts barred black and white; bill red *Green-winged Pytilia*.

ciii Red on underparts confined to flanks.

Rump and upper tail-coverts claret-red; head, mantle and base of wings pale vinaceous; tail black, washed bronze; wings with grey and black barring; sides of face and chin black; below vinaceous; flanks claret-red . . . *Black-cheeked Waxbill*.

b. Red confined to upperparts.

ai Red confined to head.

aii Red confined to forehead.

aiii Sparrow-size.

Crown and stripe through eye black; yellow stripe over eye; nape and back black, speckled white and yellow; rump yellow; chin and chest white; rest of underparts yellow; chest and flanks more or less spotted black

*Red-fronted
Barbet (Th)*

biii Very small.

Back of head, neck and mantle black, streaked white; rump and underparts lemon-yellow; wing feathers edged yellow

Red-fronted Tinker-bird.

bii Red on crown and nape, or on nape only. Bill long and pointed.

aiii Red on crown and nape.

aiv Underparts spotted.

Crimson patch between cheek and throat; upperparts dark green, spotted with white; throat white, unspotted; rest of underparts white or pale yellow

*Nubian
Woodpecker (Male).*

N.B.—Female has no red on crown, which is black heavily spotted white.

biv Underparts striped.

Crimson stripe at angle of jaw; upperparts olive green, faintly spotted white; tail dark olive washed golden; underparts dirty white streaked throughout with black

Golden-tailed Woodpecker (Male).

N.B.—Female has no red on crown, which is olive brown with small fawn spots. There is no red malar stripe.

Red confined to nape.

Upperparts brownish-black barred and spotted white; front half of crown pale brown; upper tail-coverts washed orange; chin and throat white with small dusky spots; rest of underparts faintly yellow with dusky longitudinal stripes

Cardinal Woodpecker (Male).

N.B.—The female has the red on nape replaced with black; females of the two preceding birds have red on nape, as in the male Cardinal Woodpecker, but spotted forecrowns distinguish.

cii Red confined to patch behind eye; very small.

Rump and underparts pale azure blue; crown, wings and back sepia-brown; conspicuous crimson patch behind eye

Red-cheeked Cordon-bleu.

dii Red confined to rump, stripe on wing and stripe through eye.

Above brown; rump and upper tail-coverts crimson; cheeks and underparts pale tawny; some indistinct barring on upperparts and flanks; bill black

Crimson-rumped Waxbill.

- c. Red confined to underparts, a collar or patch on chest; small to very small.
 - ai General plumage metallic green.
 - aii Chest patch red with yellow on either side.
Central tail feathers elongated; wing, tail and belly black; rest of plumage metallic green *Beautiful Sunbird*
(Male) (Central).
 - bii Chest patch orange-red; no yellow tufts.
Plumage as for preceding bird *Smaller Black-bellied Sunbird* (NE).
- bi Upperparts pale rufous-brown.
Red collar from ears to throat; upperparts barred black; outer tail feathers tipped white; chin buff, rest of underparts white with chocolate patch on abdomen; some black markings on throat . . . *Cut-throat*.

B. VIOLET IN UPPER OR UNDERPARTS.

- a. Underparts violet or deep lilac.
 - ai $\pm$ dove-size.
 - aii Conspicuous white stripe over eye; bill black.
Crown brown; back olive-brown; rump lilac; tail violet; wings violet, lilac and brown; underparts lilac streaked white
Rufous-crowned Roller.
 - bii No white eyestripe; bill yellow.
Upperparts cinnamon brown; dark blue in wings and tail; flight feathers violet; underparts uniform purplish violet
Broad-billed Roller.
- bi Smaller than sparrow.
Head, neck, chin, back and wings russet-brown; tail black; patch round eye, rump and underparts violet-blue . . . *Purple Grenadier*.
- b. Upperparts and underparts to chest metallic violet.
 $\pm$ thrush-size. Rest of underparts pure white *Violet Starling*
(Male).
- c. Upperparts and throat glossy violet blue; smaller than sparrow.
Rest of underparts white; yellow patch at base of wing . . . *Violet-backed Sunbird* (Male) (Th).

C. BLUE IN PLUMAGE.

- a. Blue in upper and underparts.
 - ai Entire plumage dark glossy blue with golden-green sheen; eye bright yellow *Blue-eared Glossy Starling*.
 - bi Entire plumage not blue.
 - aii Large birds; Guinea-fowl.
 - aiii Head crested; back of head bare, pale blue to grey blue.
 - aiv Face and throat red.
Plumage black profusely spotted with small blue spots
Kenya Crested Guinea-fowl.

- biv Throat only red.
Plumage black profusely spotted with small blue spots
except for broad unspotted black collar on lower throat
and chest *Crested Guinea-fowl* (Central).
- bii Head bare, uncrested, with no pale blue.
Lower neck, mantle and chest with long pointed feathers black
with wide white centres, giving very marked striped
appearance; breast and abdomen cobalt blue; rest of plumage
black, spotted with white; bare head and neck grey black with
band of chocolate at nape *Vulturine Guinea-fowl*.
- bii $\pm$ dove-size.
aiii Outer tail feathers elongated, streamer-like.
Much blue in wing; tail and rump cobalt; abdomen greenish-
blue; head and back of neck pale glossy-green; upperparts
pale brown; chin white; cheeks, throat and breast rich lilac
Lilac-breasted Roller.
- cii $\pm$ thrush-size. Entire upperparts and wings deep blue.
aiii No white in underparts.
Chin to chest glossy deep blue; remainder of underparts chest-
nut; underwing coverts chestnut *Hildebrandt's*
Starling.
- biii White band on chest and white under tail-coverts.
Chin to breast metallic deep blue; belly and thighs chest-
nut *Superb Starling*.
- ciii $\pm$ sparrow-size—Swallow.
All upperparts except forehead, glossy blue-black; forehead,
chin and throat chestnut; broad blue-black band across throat;
rest of underparts white washed chestnut; outer tail feathers
considerably elongated; large white spots on tail feathers
European Swallow (M).
- diii Smaller than sparrow.
aiv Most of underparts Cambridge blue.
av Head all round Cambridge blue.
Throat, chest, flanks, tail and rump Cambridge
blue; wings and back earth-brown; abdomen buff
Blue-capped Cordon-bleu (Male).
bv Blue on head confined to sides of head.
Conspicuous red patch behind ear. Above earth-
brown; rump, tail and sides of face and all underparts
except abdomen, Cambridge blue; abdomen buff
Red-cheeked Cordon-bleu.
- biv Most of underparts bright violet-blue.
Head, neck, throat, back and wings russet-brown;
rump and patch round eye violet-blue; tail black
Purple Grenadier (Th).

- civ Most of underparts pale yellow.
Above metallic blue; or green-blue; violet in crown;
blue on rump; tail black tinged blue; throat and upper
breast steel-blue and violet; rest of underparts orange-
yellow *Yellow-bellied Variable Sunbird.*
- b. Blue in upperparts, including wings, only.
- ai Blue on head, wings, back and tail.
Head, upper back, wings and tail deep blue; lower back, rump and
underparts chestnut; throat and sides of face white . . . *Mosque Swallow.*
- bi Blue confined to head or nape.
- aii Head and nape greyish-blue; $\pm$ thrush-size.
Underparts chestnut; white patch on back; wings dusky; tail
brown *Rock Thrush (M).*
- N.B.—This is northern breeding dress often seen in February;
during earlier part of visit dress more mottled and head and throat
only with blue wash.
- bii Blue confined to large spot on nape; tail very elongated and narrow.
Above grey-brown; bright blue patch on nape; head crested;
below buff; bill red *Blue-naped Mousebird.*
- ci Blue confined to rump, tail and wings.
- aii Blue in rump, tail and wings.
- aiii Underparts uniform purplish violet; $\pm$ dove-size.
Rump, tail and flight feathers deep blue; upperparts cinnamon-
brown; bill yellow *Broad-billed Roller.*
- biii Underparts white, striped with black; $\pm$ sparrow-size.
Lower back, rump and tail light blue; some blue in wings;
eyebrow and collar round neck white; black line through
eye; rest of upperparts brown; upper bill black, lower
red *Striped Kingfisher.*
- bii Blue confined to rump.
Upperparts except rump brown; throat brown; rest of underparts
green; yellow patch on crown and shoulder of wing . . . *Brown Parrot.*
- c. Blue confined to underparts. $\pm$ thrush-size.
General plumage above, chestnut; tail dark green; central tail feathers
elongated; throat yellow with black line below; rest of underparts bluish-
green; bill black, rather long, pointed and decurved . . . *European Bee-eater (M).*

D. YELLOW IN PLUMAGE.

- a. Yellow in upper and underparts.
- ai Black on head and throat.
- aii Entire head and throat black. $\pm$ thrush-size.
- aiii Back, wings and tail bright green.
Broad collar on back of neck, chest and breast yellow; belly
green; bill red *Yellow-Collared Lovebird.*

- biii Back greenish-yellow; wings black.
Rump and whole of underparts, other than throat, bright yellow; tail black with yellow edges; wings with white edges
Black-headed Oriole.
- bii Black on head confined to crown.
aiii Red on sides of head and throat. $\pm$ thrush-size.
Underparts lemon-yellow; yellow collar on hind neck, spotted black; black line down centre of throat; upperparts, wings and tail black, spotted yellowish-white; rump red *Red-and-yellow Barbet* (Male).
- biii No red on sides of head or throat; $\pm$ sparrow-size.
Sides of face, eyebrow and entire underparts yellow, rest of upperparts jet-black *Black-necked Weaver* (Female).
- cii Black on head and throat confined to black stripe through eye and bib on chin; $\pm$ sparrow-size.
Crown, sides of face and rest of underparts yellow; nape and rest of upperparts jet-black *Black-necked Weaver* (Male).
- dii Black mask on forepart of face; black chin on throat; $\pm$ sparrow-size.
aiii Front half of crown black; eye white or pale yellow.
Rest of crown, nape and rest of underparts yellow; upperparts dusky olive-green; chin and throat black
Masked Weaver (Male).
- biii Narrow black band on forehead; eye orange to red.
Rest of crown chestnut; underparts yellow; upperparts dusky olive-green; chin and upper throat only black
Vitelline Masked Weaver (Male).
- eii Black confined to throat.
Above brown, spotted and barred with yellowish-white; head spotted with yellow and red; rump and underparts yellow; patch on throat and spots on chest black; under tail-coverts red
D'Arnaud's Barbet.
- bi No black on head or throat.
aii $\pm$ thrush-size.
Whole underparts yellow; chest washed orange; forehead and stripe above eye yellow; hind crown, sides of face and nape lead-grey; rest of upperparts yellowish-green . . . *Sulphur-breasted Bush-Shrike.*
- bii Sparrow-size or smaller.
aiii Conspicuous ring of white feathers round eye; very small.
Above greenish-yellow, with powdery appearance; forehead yellow; underparts canary-yellow *Yellow White-eye.*

biii No white ring round eye; $\pm$ sparrow size.

aiv Whole underparts yellow; sparrow-size.

Lower back and rump, stripe over eye yellow; sides streaked black; rest of upperparts green with blackish streaks; bill heavy . . . *Kenya Grosbeak Canary*
(Male) (Th).

biv Throat and chest only yellow; smaller than sparrow.

Forehead, sides of face, rump, chin, throat and chest pale yellow; belly white; upperparts green, striped dusky . . . *White-bellied Canary* (Th).

b. Yellow confined to upperparts.

ai Yellow confined to rump.

aii $\pm$ dove-size.

Above ashy-grey, washed blue-green on wings; rump golden-yellow, emerald green and sky-blue; throat to chest ashy-grey washed orange; breast and abdomen orange . . . *Orange-bellied Parrot* (Male) (NE).

N.B.—Female has breast to abdomen green.

bii $\pm$ sparrow-size.

Above brown streaked dusky; sides of face and band on breast dusky; chin, throat and belly white . . . *Yellow-rumped Seed-eater*.

bi Yellow confined to edges of wings and tail feathers; $\pm$ thrush-size.

Above ashy-brown; wings dusky with yellow edges; central tail feathers brown, others with yellow edges; outer tail feathers entirely yellow; underparts white with narrow dusky transverse bars; under wings bright yellow . . . *Black Cuckoo-Shrike* (Female) (Th).

ci Yellow confined to crown and wings; $\pm$ dove-size.

Upperparts, throat and chest dark brown; rump blue; rest of underparts green; patch of yellow on crown and at shoulder of wing; wing feathers edged yellow . . . *Brown Parrot*.

di Yellow confined to streaks on upperparts and wings.

aii Black spots on breast and flanks.

Yellow confined to streaks on rump and on edges of wings; upperparts, crown and throat black; white line above eye and black line through eye; underparts white spotted black on breast and flanks
Spot-flanked Barbet.

N.B.—In some races underparts are washed pale yellow.

bii No spots on underparts.

Above black with yellow streaks on mantle, rump and wings; yellow edges to wings and tail; white stripe over eye and black stripe through eye; chin and throat brown, running to point on chest; rest of underparts white . . . *Brown-breasted Barbet*.

c. Yellow confined to underparts.

ai Entire underparts yellow.

aii Tail very long and graduated; $\pm$ thrush-size.

Head and neck metallic green; rest of upperparts dark metallic blue with purple wash; below metallic golden-yellow, a patch on chest metallic violet *Golden-breasted Starling*.

bii Tail not noticeably long.

aiii $\pm$ thrush-size.

aiv Crown, neck and sides of face grey.

Back, wings and tail green; underparts bright yellow, with orange on breast . . . *Grey-headed Bush-Shrike*.

biv Crown, neck and sides of face uniform with back.

Upperparts dark olive-brown; underparts pale sulphur-yellow . . . *Yellow-bellied Greenbul* (Th).

bihi $\pm$ sparrow-size.

aiv Conspicuous black and white lines on sides of head.

av White line above eye; no white line below eye.

Back and wings brown and grey with black streaks; crown black with pale streak through centre; wide black line through eye; some white in wings and at tip of tail; underparts canary-yellow, slightly orange on breast . . . *Three-streaked Bunting*.

bv White line above and below eye.

Crown and sides of face black; central white line through crown; mantle chestnut; wings dusky; rump and tail-coverts grey; tail dusky with white edges and tips; underparts bright yellow; golden rufous on chest . . . *Golden-breasted Bunting*.

biv No conspicuous black and white lines on side of head.

Upperparts yellowish-green; forehead and line over eye yellow; underparts rich yellow; tail rather long and constantly "wagged" . . . *Yellow Wagtail*
(Male) (M).

N.B.—There are several species and sub-species of Yellow Wagtails which pass through on migration, none very easily distinguished from the others. This is one of the commonest.

ciii Very small.

Above pale olive-green; tail blackish with white tips and edges; below pale yellow . . . *Buff-bellied Warbler*.

bi Yellow confined to throat.

aii $\pm$ pigeon-size.

aiii Above and below unstriped.

Olive-brown above; white stripe over eye and black streak in front of eye; belly and thighs dark chestnut; under wings black; legs very short; wings pointed *Yellow-throated Sandgrouse* (Male).

N.B.—The female is mottled black and golden yellow above; chest streaked; belly banded black; throat buff.

bii Above and below streaked and mottled.

Throat bare, yellow; above pale olive brown with cream stripes; below mottled grey-brown and cream with chestnut on flanks and abdomen; bare red ring round eye; legs black
Yellow-necked Spurfowl.

bii ± thrush-size.

General plumage above chestnut; bill rather long, pointed and decurved; throat yellow with narrow black line separating it from pale greenish blue underparts; tail dull green, central tail feathers slightly elongated and pointed . . . *European Bee-eater (M).*

cii ± sparrow-size.

Upperparts bright grass-green; bill long; throat yellow; black collar edged chestnut; black line through eye; white tips to tail preceded by black band; underparts greenish-cinnamon
Little-Bee-eater.

ci Yellow confined to vent.

Thrush-size; crown and face dusky brown; upperparts brown; underparts dirty white with darker chest; head slightly crested
Black-capped Bulbul.

di Yellow confined to breast or breast and belly; very small birds.

aii Underparts metallic green.

aiii Central tail feathers very long.

A patch of yellow on either side of red breast; general colour metallic green; wings, tail and belly black . . . *Beautiful Sunbird (Male).*

biii Tail square; no elongated feathers.

aiv Throat metallic violet, terminated by black band.

Upperparts dark metallic green-blue; rest of underparts yellow; bill long and decurved . . . *Yellow-bellied Variable Sunbird (Male).*

biv Throat metallic green, bordered by violet band.

Upperparts metallic grass-green; bill short and decurved
Collared Sunbird (Male).

bii Upperparts not metallic green.

aiai Upperparts grey.

Throat and chest grey; belly bright yellow . . . *Yellow-bellied Erememola.*

biii Upperparts green.

Forehead and sides of face grey; underparts white with broad yellow band across chest; black spot in centre of chest; tail rather long and narrow
Black-breasted Apalis.

E. GREEN IN PLUMAGE.

a. Tail very long.

ai Thrush-size or larger.

aii General colour black and iridescent green.

Back, head and throat iridescent green; wings and tail black glossed purple; white spots near tips of most tail feathers; white bar in wing; red long bill and legs *Kakelaar*.

bii General colour grey above, vinous below.

Green confined to large spot on chest and to wash below wings and tail; neck white; head and throat bare; head crested
Bare-faced Goaway-bird.

bi Smaller than sparrow.

aii Yellow patch on either side of red chest.

General colour metallic green; wings, tail and belly black
Beautiful Sunbird (Male).

bii No yellow patch on sides of chest.

Plumage as for preceding bird, but red on chest orange-red, not bright scarlet *Smaller Black-bellied Sunbird* (Male).

b. Tails not noticeably long.

ai $\pm$ dove-size. Parrots.

aii Breast and abdomen green.

aiii Upperparts green.

Head, throat and neck greyish-brown; remainder of upper- and underparts green *Brown-headed Parrot*.

biii Upperparts ashy-grey.

Wings washed blue-green; rump golden, emerald and blue; throat and chest ashy-grey; abdomen green *Orange-bellied Parrot* (Female) (NE).

bii Breast and abdomen orange.

Wings washed blue-green; rump yellow, emerald and blue; rest of upperparts ashy-grey; throat to chest ashy-grey washed orange *Orange-bellied Parrot* (Male).

bi $\pm$ thrush-size.

aii Green on upper and underparts.

aiii Green on underparts confined to belly.

Head and throat black; collar on hind neck yellow; rest of upperparts green; neck and breast yellow *Yellow-collared Lovebird*.

biii Green on underparts confined to neck.

All upperparts and neck shining emerald-green; underparts lemon-yellow; outer tail feathers barred white *Emerald Cuckoo* (Male).

- bii Green confined to upperparts.
- aiii Entire upperparts green.
- aiv Upperparts iridescent bronzy-green.
Underparts pure white . . . *Klaas's Cuckoo* (Male).
- biv Upperparts dull green.
Wings dusky with large yellow spots; chin to chest
olivaceous-grey; rest of underparts ashy-white; tail
feathers tipped yellow . . . *Nicator* (Th).
- bihi Head and upper mantle grey; rest of upperparts green.
Below bright yellow; breast and chest deeper . . . *Grey-headed Bush-Shrike*.
- cii Green confined to tail; bill rather long, pointed and decurved.
General plumage above chestnut; throat yellow, a black band
separating it from pale greenish-blue underparts; tail dark green;
central tail feathers elongated . . . *European Bee-eater* (M).
- ci ± sparrow-size.
Upperparts bright grass-green; underparts cinnamon, with yellow
throat; black line through eye; white tip to tail preceded by broad
black band; bill long, black and decurved . . . *Little Bee-eater*.
- di Smaller than sparrow.
- aia Entire upperparts metallic grass-green.
Throat metallic green with violet band between it and yellow
underparts . . . *Collared Sunbird* (Male) (Th).
- bii Green confined to wings.
Head, mantle and rump grey; tail ashy; wing coverts and edges of
flight feathers green; underparts pale grey, whiter in centre
of belly . . . *Grey-backed Camaroptera* (Th).

BRIEF FIELD NOTES

In common with the practice adopted in Part III of these field keys, I have included in the following field notes only those birds which have not been included in previous parts of the keys. The birds are given again in alphabetical order, for easier reference. The arrangement is based, where possible, on the group name of the bird, i.e. Vulture, Hooded; Goaway-Bird, White-bellied.

APALIS, Black-throated—Small long-tailed birds of the tree-tops with characteristic call—a slowly repeated series of staccato notes “clep clep . . .” repeated up to a dozen times. The yellow breast band with black spot beneath, with the small size and long tail, are diagnostic field characters. Generally seen singly or in pairs.

APALIS, Red-faced—Confined to north-eastern Tanganyika, in very arid country. Small, long-tailed birds, chiefly noticeable for habit of erecting the tail and waving it from side to side. Chestnut forehead and pure white underparts with long black tail are good field characters. Grant gives song as a clear chirping “tick-tick-tick-tick” and alarm call “seep seep”.

- BABBLER, Pied**—Gregarious in small parties of 6-8 in open thorn bush; typical Babbler habit of a constant chatter; call a series of harsh "squee-er" followed by 6-8 hysterical chuckled notes.
- BARBET, Brown-throated**—Similar in size to Spot-flanked and Red-fronted Barbets; distinguished by triangular brown patch on throat and chest, by broad *white* stripe over eye and absence of red on forehead; sometimes in small parties; call like the whistled squeak of a child's toy (Grant).
- BARBET, Brown-breasted**—Striking feature is the crimson head and throat, very similar to the Black-collared Barbet, and distinguished by *brown* collar and *white* underparts; very partial to wild figs. Call a subdued "wāh" quite distinct from the loud call of the Black-collared Barbet.
- BARBET, D'Arnaud's**—Very distinctive "pepper-and-salt" appearance of upperparts, shared with the Red-and-yellow Barbet, from which it is readily told by the lack of red on head; noisy birds which quickly attract attention by the duetted call "muhoë kavuta". When duetting one sits very upright, the other raises the tail vertically and circles it while calling.
- BARBET, Red-and-yellow**—"Pepper-and-salt" plumage and bright head and rump easily distinguish this bird; tends to keep to low, thick scrub. Call a high-pitched woodpecker-like rattle "kek kek kek" and a throaty "keō keō". Moreau also records a call resembling "lots o' burble".
- BULBUL, Yellow-bellied**—Confined to thickets and of skulking habits; large thrush-size; plain yellow underparts and white plumules above and below eye distinctive; call a low chuckled conversational "chuck chuk churu chuck", the third note higher than the rest.
- BUNTING, Golden-breasted**—Sparrow-sized, brightly coloured birds more frequently seen on ground in pairs; easily confused with following bird. This species has *two white lines on side of face*, one above and one below the eye, and the *back* is a *brighter chestnut*. Song "chwee-chi-it-twee" (Belcher).
- BUNTING, Three-streaked**—Of similar appearance and habits to the preceding; has only *one white line on side of face*, above eye; back brown and streaked. In flight the two white lines on wing are noticeable. Song a whistled "wee-chidder-chidder-wee" (Moreau).
- BUSTARD, White-bellied**—A small bustard with typical long neck and legs; black cap, slatey blue nape and neck distinctive; often in small parties and when flushed rarely fly any distance. Call a harsh "krahaonh".
- BUZZARD, Augur**—Very conspicuous *black-and-white* eagle-like bird of medium size, with characteristic *rufous tail*; usually seen not very far from rocky hills and mountains. The species has a melanistic form, wholly black, but chestnut in tail usually present. Call a complaining "kwa kwa" on a rising note.
- BUZZARD, Grasshopper**—A migrant to Tanganyika from Sudan and Somaliland in November to March. A long-tailed, rather long winged, large hawk with very conspicuous and characteristic chestnut flight feathers, showing as chestnut patch on wing when closed; often seen in small parties, on low shrubs and grasses, or flying low down.
- CANARY, Kenya Grosbeak**—Has characteristic very heavy bill, and yellow rump and belly are noticeable features. A larger and darker bird than the following,

and the Yellow-rumped Seed-eater, both of which are generally seen in flocks, whereas this species is more usually solitary or in pairs. Note all-yellow underparts.

CANARY, White-bellied—Usually in small flocks; a small yellow-rumped bird with *white* belly and *yellow* breast.

CHATTERER, Rufous—A skulking, generally noisy bird, keeping low down in thicket; usually in small parties of 4-5 birds; note *rufous brown of entire underparts*, c.f. following species. Call a guttural chattering, also a long complaining whistle.

CHATTERER, Scaly—Another skulker, keeping in small parties and more often heard than seen; note *grey chin to chest and buff belly*. Most frequent call, constantly uttered, is best likened to a squeaking wood screw.

CORDON-BLEU, Blue-capped—Very small, very distinctive; distinguished from Red-cheeked species by its *pale blue crown and nape*, uniform with underparts. In pairs or small parties, frequently on ground.

COURSER, Two-banded—A small, long-legged ground bird of open areas in thorn bush; two narrow black bands on buff chest are characteristic; the white rump and very rufous wings are noticeable in flight.

COURSER, Violet-tipped—Another long-legged, plover-like ground bird, rather larger than the preceding, and preferring more thickly wooded areas. Tends to most activity in the evening and frequently seen in car lights; in flight dark wings have distinctive white leading edge; note single black band between brown chest and white belly.

CROMBEC—Very small bird in which tail is so short that the bird appears almost tailless; very similar to Red-faced Crombec but note black line through eye and white chin and sides of face. Mainly birds of trees, where they run rapidly up branches in search of insects; confined to N.E. Tanganyika—Mkomasi area. Said to have a varied shivering little song (Grant).

CUT-THROAT—Very small birds belonging to the weaver-finch sub-family; gregarious in non-breeding season; often found round villages and cultivation, where they spend much time on the ground; have rapid noisy flight. The crimson collar from ear to ear round the throat is characteristic, while black barring on head and rump is most noticeable.

DOVE, Laughing—The call of this bird is one of the most characteristic calls of the drier areas of the Territory; it is a chuckled series of five notes "coo coo rook oo roo". Readily distinguished from the other "grey" doves of this habitat by the lack of a black collar on hind neck, and the much darker lilac of the head and breast, and the tawny mantle; the black markings on chest are also characteristic.

DOVE, Mourning—Very similar to the Cape Dove, having the black half collar on back of neck, but in the field has a darker appearance overall, the iris is very pale, almost white, compared with the very dark iris of the Cape Dove. The call is quite different—a throaty "coouk coo" on alighting in a tree, and a longer call "tū tutu tū tutu".

EAGLE, Black-chested—A fine, medium sized eagle, of which the adult is easily identified by the almost black neck and chest, and pure white, unspotted breast and belly. Often to be seen sitting on some high vantage point, such as a dead tree; also circles overhead like a buzzard. Grant records a hovering like a kestrel.

- FALCON, Pigmy—The smallest of our birds of prey, no larger than a Blue-eared Glossy Starling; of very sedentary habits, generally seen in pairs, sitting motionless in small thorn trees. Very broad white rump contrasting with pure grey back of male, or chestnut of female, most noticeable in flight.
- FLYCATCHER, Grey—A small bird, slightly larger than the Tit-Flycatchers q.v., and of a browner grey, the underparts paler ash-grey; no white in tail; sits motionless on low bushes, darting to the ground to take insects.
- FRANCOLIN, Crested—A medium sized francolin of rather skulking habits, keeping to patches of thick scrub and thicket; in flight the black outer tail feathers are noticeable and distinctive. Also note very dark crown, bold white stripe over eye and lack of dark stripes or blotches on underparts. Usually in small coveys of 4-5 birds. Noisy, with raucous high pitched call "strike-a-light strike-a-light".
- GO-AWAY-BIRD, Bare-faced—A most noticeable bird of this habitat, both for its size and its characteristic calls. Pale grey colour, high crest and long tail very distinctive; flight undulating with alternating rapid wing beats and rests. Often to be seen in pairs in the tops of trees where the white necks are conspicuous. Call a chuckled scolding "go-away"; also has a deep purring note.
- GO-AWAY-BIRD, White-bellied—As noticeable as the preceding species, and of similar shape, with long tail and high crest. Usually in small flocks of three or four birds which follow one another with heavy flight from tree to tree. Call a nasal "ha haa" frequently uttered in flight.
- GRENADIER, Purple—Striking little birds, with their bright violet-blue underparts in the males, and red bills. Keep to lower bushes and scrub and frequently forage on the ground, rarely more than two together; sometimes in company with Blue-capped Cordon Bleu.
- GUINEA-FOWL, Crested—Shy, rather local birds, keeping to the depths of dry thicket, although they sometimes forage on the edges; gregarious in flocks of up to 20 birds. Tufted head, without horny protuberance, bright blue bare nape and red throat, distinguish this readily from the commoner Helmeted Guinea-fowl. Call a rather rapid grating "trr tek tek tek".
- GUINEA-FOWL, Vulturine—Handsome, large birds of most arid areas, keeping to more open ground. Gregarious in flocks of 10-15. Peculiar for the very long narrow feathers of the foreneck and mantle, which are black, white and cobalt-blue. Seen generally on the ground, but roost, like other Guinea-fowl, in trees. Call similar to other species.
- HORNBILL, Red-billed—This and the next species characteristic birds of the dry thorn bush. Found in pairs or small parties, often seen on ground. Flight dipping, a series of wing flaps and then a glide. Note the *all red* bill of this species, which is heavy and noticeably long and decurved; tail also long. Call a long drawn out rather high pitched "hoot hoot hoot tawut tawut tawut . . .".
- HORNBILL, Von der Decken's—Generally in pairs or solitary, usually seen perched in trees, from which they often fly down, pick up food, and return to perch. The bill is characteristic—basal half red, distal half ivory to yellow in male; in female it is all black. In flight seen from behind, black stripe down centre of white head and nape, and black centre of tail, with broad white on either side, characteristic. Call a chuckled low "hoota hoota hoota" repeated many times, accompanied by opening of wings and bobbing on perch.

KESTREL, European—A visitor between November and April, often to be seen in numbers during passage, hovering in characteristic manner while hunting. A medium sized hawk with noticeably slate-blue tail and nape, and streaked rufous underparts. There is a resident kestrel, and other visitors, which are almost indistinguishable in the field.

LARK, Fawn-coloured—The larks are somewhat difficult to identify in the field without some reference to their habits. This species, a rather slender lark, is more a bush-lark, than a bird of large open spaces. Common in parts of the Northern Province; distinctly streaked back with tawny ground. A short sweet song uttered from a low bush. Grant records a flappeting flight, with wing snapping similar to the Flappet Lark.

LARK, Flappet—Almost invariably heard rather than seen; has characteristic display flight during which it soars in the air and then snaps the wings loudly and rapidly as it shoots up, before it descends a short distance to rise again and repeat the performance. The sound of the wing-snapping carries a considerable distance. On the ground very shy, creeping about in the grass.

LARK, Pink-breasted—In N.E. Tanganyika only. A rather pale bird, greyer, without distinct streaks on the back. Also a bird of scrub and bush, does not “flappet”, and sings from a perch. The song is an “unmusical trill” (Moreau).

LARK, Red-naped—One of the commonest larks of dry thorn country, in areas of rough, tussocky grass. It does not appear to like short turf-like grass. Several races occur from north of the Territory to Iringa and the west. A heavy, stocky lark with short tail, and noticeably rufous wings and nape. Sings generally from a rock or ant-heap, less frequently from a bush (c.f. Flappet Lark), and rarely while in hovering flight. A melancholy song of 5-6 notes, and a plaintive call “sip seeū” rising on the last syllable.

LARK, Singing Bush—A rather local, uncommon small lark, confined to N.E. Tanganyika, in drier areas. While mainly a bird of open grassland, is also to be found in areas of thin scattered thorn. Has song-flight more typical of European Lark, circling high in the air, in fluttering flight. Song consists of 5-6 short “chit’s” followed by short lark-like phrase. It is repeated every 5-6 seconds; at end of song there is a steep descent to a bush.

MOUSEBIRD, Blue-naped—Generally seen in small flocks of six to a dozen birds; fly in rather close formation, with direct, fast and somewhat undulating flight. Draw attention to themselves by a plaintive rather high-pitched whistle in flight and when perched. In flight the long thin tail is distinctive; blue nape and red bill are characteristic.

NICATOR—Confined to areas of thicket; more often heard than seen, having a beautiful loud, rich and throaty song with some notes of Nightingale quality—one phrase resembles “choo choo what-do-ye-say”, often preceded by series of guttural notes. Large yellowish spots on wing coverts readily visible and aid identification.

NIGHTJAR, Donaldson-Smith’s—A rare nightjar of the very dry country of N.E. Tanganyika; when flushed in daytime flies low and only a short distance. This nightjar is characteristically rufous in flight and is one of our smallest nightjars. There are no records of its breeding habits or call.

NIGHTJAR, Gabon—One of our commonest nightjars and occurs in considerable numbers in June and July. Notable for its habit of squatting on roads at night, its eyes glowing red in car lights; leaps at last moment into the air and nearly always escapes death. Hawks insects from the ground, making short twisting and turning, noiseless dashes. Call a prolonged twittering note “tok tok tok” repeated continuously, with an occasional low “fyop” at the end. (Grant).

OXPECKER, Red-billed—Hardly likely to be confused with any other bird as almost without exception seen in company with cattle, perched on the animals. Has fluttering, starling-like flight. Waxy-red bill and plain earth-brown upperparts are characteristic. Call a hissing “ts-ē” and a warning rattle. (Grant).

PARROT, Orange-bellied—Usually in pairs or small parties of 4-5 birds; has very rapid direct flight, usually accompanied by loud screeches. Habits very similar to those of Brown Parrot, but a *greener* bird above and *without the conspicuous yellow* on the forward edge of the wing, found in that species. Confined to N.E. Tanganyika.

PEREGRINE, African—A dark slate backed hawk with long pointed wings and rapid flight. Has a well-marked dark moustachial streak at side of the white throat. Nowhere common and might be confused with the rather larger Lanner, with similar stripe; the latter has a rufous crown to head. Takes prey on the wing, by rapid stoop.

PIGEON, Speckled—A large pigeon, generally seen in small flocks; it is the pigeon resident at Dodoma Hotel. In flight the *very pale grey* rump, contrasting with chestnut wings and back, diagnostic. Call a rapid continuous deep “coococococococoo”. Frequently to be seen feeding on ground in large flocks.

PLOVER, Crowned—A very noisy, easily identified bird of the open spaces in this habitat, and very partial to burnt areas. *Long* legs and the *black crown encircled by a white line*, below which is a black line, together with black collar on breast are diagnostic. Generally in small parties, often standing quite still carefully watching intruder. When disturbed have very loud raucous cry, birds taking wing and flying round with darting flight near to the ground.

PYTILIA, Green-winged—Small birds of the edges and depths of thick scrub and patches of bush. Generally seen singly or in pairs. Note the deep red tail and rump from the rear, and the bright red throat and yellow chest from the front. Very silent and generally creep about near the ground.

ROLLER, Rufous-crowned—A more heavily-built Roller than the commoner Lilac-breasted Roller, and without the pale blue of that species; also has a square tail without elongated outer tail feathers. A sluggish bird, showing less of the tumbling acrobatics of the paler bird. Note *black* bill, differentiating it from the Broad-billed Roller, which has *yellow* bill and deep blue in wings.

ROBIN, White-throated—A somewhat rare migrant from Asia Minor, not unlike a small Cossypha; white chin with rufous underparts and black on face, are striking in the field; keeps to rather thicker areas of scrub, but often emerges to feed on the ground. Has a harsh alarm call—“chak” and a rather sweet though harsh whistle.

- SANDGROUSE, Yellow-throated**—Very gregarious, pigeon-like, in packs of five to several score of birds; generally in more open parts of habitat. Rapid flight accompanied by a characteristic constant chuckling conversation. By far the commonest of the sandgrouse in Central and Northern Tanganyika. Note no elongated central tail feathers, differentiating from the Chestnut-bellied, and large size and pale throat of both sexes from the Black-faced Sandgrouse. Very regular in habits of going to water morning and evening.
- SCIMITAR-BILL, Abyssinian**—Typical Wood-Hoopoe of dry thorn country, noticeably smaller than the two other common species of woodland. More commonly seen as single birds or in pairs, more rarely in small parties. Glossy blue-black plumage with long tail and long decurved *yellow* bill diagnostic. Flight slow and undulating; call a series of chuckled "toot's", also a slight throaty chuckle "kwep wep pepepep".
- SEED-EATER, Yellow-rumped**—Common small brown-backed finch-like birds of bush and tree tops, generally in small parties. Note *no yellow on underparts* but yellow rump, differentiating from similar sized White-bellied Canary, which has yellow on breast.
- SHRIKE, Long-tailed Fiscal**—Common and characteristic bird of this habitat, usually perched prominently on top of tree or other vantage point; note long tail, white rump and black head and wings with grey back. There are three much less common long-tailed Shrikes which occur in parts of the habitat and could be confused but two have grey crowns, and the third has black crown, but much paler grey back. Four or five may congregate and display with rattled, scolding notes, and much raising, lowering and sideways flirting of tails.
- SHRIKE, Northern Brubru**—Silent, unobtrusive birds, moving through bush and tree tops singly or in pairs, searching for insects. Call draws attention—male makes a whistled "bree -e" answered by female with a lower "tchu". Note the chestnut on sides of white underparts, which is characteristic in a black-and-white bird of this size.
- SHRIKE, Pringle's Puff-back**—Confined to N.E. Tanganyika—a desert species; usually in dense foliated trees, searching for insects.
- SHRIKE, Rosy-patched**—A typical bird of the habitat, partial to clumps of thicker low scrub; easily identified by light crimson rump, chin and chest, across which is a black band; tail rather long. Noisy, with a variety of calls. Song "do-me-so-ray" (Grant).
- SHRIKE, Slate-coloured**—A skulking bird of depths of patches of thicket and scrub, more often heard than seen. Has typical duet call of so many shrikes. Male calls a clear "knoh -oh", the second note higher than the first, and female answers with a harsh "huwer". Another call—male "phwee phwee" followed by low "kiror" from female and completed by "ee whee" by male.
- SHRIKE, White-crowned**—Common in small flocks of 5-6 birds; fluttering flight from tree to tree. Readily identifiable by white crown and nape and white rump. Has a range of high-pitched squealing notes and a sharp call "kaa kak".
- STARLING, Ashy**—Of restricted distribution, not recorded north of Mbugwe (Mbulu District). Typical of central Ugogo and common there; particularly noticed in flat-topped acacias, where they spend much time. Generally in small flocks. Long tapering tail and uniform dusky-grey colour characteristic.

STARLING, Golden-breasted—Commonest in N.E. Tanganyika, particularly in Same District. Striking long-tailed birds, the tail golden and violet-blue. An unmistakable bird with golden underparts contrasting with deep blue upper-parts. Seen in small flocks, which are difficult to approach. Has a chattering call.

STARLING, Hildebrandt's.

STARLING, Superb. These two starlings are very similar in appearance and occur together, but the Superb is generally the commoner. Hildebrandt's is more frequent in Northern than Central Province although recorded to north Kilosa on edge of Ugogo. Striking blue and chestnut plumage, Hildebrandt's being readily identified by complete lack of white in plumage. Frequently in small flocks; Superb has variety of cheerful warbled notes and chattering calls. Hildebrandt's has a chuckled chattering "chwer chwer chweup chooi chooi chooi" with variations.

STARLING, Wattled—Very gregarious, at times in very large flocks; commoner in more open parts of habitat. Noticeable for pale grey colour contrasting with black wings and tail. In breeding dress males have featherless head and develop black wattles on forehead and chin. Feed largely on ground. Call a whistled "phwee" and a somewhat harsh, throaty "wher while wer".

STORK, White—Visitor to many parts during northern winter and most noticeable in flocks during February and March prior to return north. Long-necked, long-legged, with long and straight bill and can hardly be confused with any other stork with its red bill and legs, and white plumage with black flight feathers. Often circle high in air for long periods; follow locust swarms.

SUNBIRD, Beautiful.

SUNBIRD, Smaller Black-bellied. Two very similar sunbirds, the former from northern and central Tanganyika, the latter from north-eastern areas, east of Kilimanjaro. Easily identified as the only sunbird in the habitat in which the male has elongated central tail feathers. Difference between species slight—the Beautiful has bright red patch on chest, flanked by yellow; in the Black-bellied the patch is orange-red and there is no yellow at sides.

SWALLOW, European—Very common in scattered flocks during northern winter and particularly noticeable round herds of cattle, hawking insects disturbed and attracted by the stock. Note the chestnut chin and blue throat and blue cap which distinguish it from common and similar local Wire-tailed Swallow, which has white chin and throat and chestnut crown.

SWIFT, Boehm's Spinetail—A bird of curious appearance and flight, and extremely local. Noted at Kongwa, Central Province. Flight erratic and bat-like; very short tail and long wings are striking. May be seen in small numbers circling high in the air, the silhouette characteristic and the clearcut black-and-white plumage flashing in the sun, the white rump appearing like a white tip to the body.

SWIFT, Horus—Gregarious, very similar to the commoner White-rumped Swift, but more a bird of the country; this species is noticeably larger and the fork in the tail is much less deep.

THICKNEE, Spotted—Noticeable for long legs and large eye in relation to the head, with very spotted upperparts. Tends to skulk in the shade during daytime but becomes active at dusk when it draws attention by its loud, rather plaintive call "tehe-uuu" (Grant).

TINKER-BIRD, Red-fronted—A very small, widely distributed bird, mainly of the tree tops, more often heard than seen; a stocky very short-tailed bird, a very small edition of the Red-fronted Barbet, its small size and red forehead being quite distinctive. Call characteristic—a long series of rather high-pitched "pop's" repeated at roughly one second intervals. Call easily imitated by a whistle and birds can be attracted to within a very few feet by imitation. There is also a short high trill on a descending scale.

TIT-FLYCATCHER, Banded—Attention to this lively small bird generally first drawn by its very characteristic call—a loud trill which rises and falls twice and finishes with two separate notes, remarkably loud for the size of the bird; spends most of its time foraging in the tops of flat-topped acacias and other trees. Note the black partial collar on throat and spotted chin and throat, which are distinctive.

TIT-FLYCATCHER, Grey—A small bird, the almost black tail contrasting noticeably with pale grey back; on alighting, twists tail to right and left, gradually fanning it out, and raising it over the back; this displays the white outer tail feathers. Call a slight plaintive whistle.

TIT, White-breasted—Though widely distributed not considered common; a bird of trees in more open areas. Readily identified by the contrasting white belly and black chest and upperparts with white wing bar. A soft song "pee pee purr"; also a dry, twittering trill and a soft clicking note.

WAGTAIL, Yellow—Visitor during northern winter, generally in flocks particularly noticeable in February and March. The long constantly wagging tail and yellow underparts readily identify this group of which two or three rather similar species and races occur. Usually attendant on herds of cattle which disturb insects on which the birds feed.

WARBLER, Buff-bellied—Very small birds, confined to northern areas of the habitat. Frequent in small parties of 4-5, searching for insects in tops of flat-topped acacia trees. Has a rapid rather angry little chatter which finishes in a small crescendo trill "preeeee chit chit".

WARBLER, Grey Wren—A small shy bird, generally singly or in pairs, keeping to thickets and patches of thick scrub in which it creeps about rather silently, the tail constantly swinging up and down. Note the dark barring on the underparts, which is characteristic. Has a soft, often repeated trill. Grant records a far-reaching metallic clinking, like that produced by knocking two stones together.

WAXBILL, Black-cheeked—Very distinctive little birds, widely distributed in this habitat, but not common. Generally seen in pairs; the black tail and black sides to the head are good field characters, combined with small size and pale lavender plumage.

WAXBILL, Crimson-rumped—Widely distributed and common little birds, generally in small flocks, feeding in grasses or foraging on the ground. Distinguished from Common Waxbill by the crimson rump, crimson edges to wing coverts and black, not red, bill.

WEAVER, Black-capped Social—Gregarious birds, rather local and confined to N.E. Tanganyika. The contrast of black cap and black tail with brown upperparts and white underparts very striking in field. Breed in dense colonies in various types of trees and remain near the nesting colony all the year round.

WEAVER, Black-necked—Widely distributed and fairly frequent; generally in pairs, rarely in small groups. Unlikely to be confused with any other bird in the habitat. Note the sharply contrasting black back, wings and tail, with yellow underparts. Male quite characteristic with golden head and small black bib on chin; female has black crown and no bib.

WEAVER, Speckle-fronted—Small birds gregarious in non-breeding season, but nests generally singly. Noticeable field characters are the contrasting rufous hind crown and pale brown back, while the speckled black and white forehead is characteristic of this species. Spend much time foraging on the ground.

WEAVER, Vitelline Masked—A gregarious species, well distributed in the habitat. This is a "green and yellow" weaver rather than a "black and yellow" such as the Black-necked Weaver. Very similar to the Masked Weaver with black sides to face, but note that this species has very narrow black forehead and deep golden crown, compared with broad black forehead and yellow crown. Below, black is much more restricted, only on chin.

WEAVER, Red-billed Buffalo—Large, starling-like birds, with rather heavy ungainly flight; gregarious and notable for their noisiness, having a variety of calls, from a high metallic cicada-like "qwēē qwēē", to a high-pitched "qweedle ee qweedle ee". There is also a harsh excited chatter.

WEAVER, White-headed Buffalo—One of the most easily identified birds of this habitat, with its vermilion rump and contrasting clear white head and underparts with black back; usually in small flocks which spend much time on the ground. Call loud, harsh and metallic; do not fly far when disturbed, usually up into a low tree from which the intruder is watched.

WHEATEAR, Capped—Widely distributed, solitary or in pairs, mainly a bird of bare, open ground and low shrubs. Main characteristic a *white rump* and *black collar* on breast. This latter and the rufous upperparts distinguish it from the Common Wheatear, a grey bird, which also occurs in the habitat. A good mimic of other bird calls. Sings in flight, which is lark-like; song a variety of notes, some lark-like, others with the fluted notes of a bee-eater; also harsh bold notes.

WHYDAH, Fischer's—The male in breeding plumage is quite unmistakable with its long, very thin straw-coloured tail feathers, contrasting with the black back and pale buff underparts. Usually in pairs or very small parties—in the non-breeding season plumage changes and becomes sparrow-like, birds forming small flocks.

WHYDAH, Paradise—The name "tadpole-bird" is most descriptive; in breeding dress another unmistakable bird, characterized by the vane-like broad central tail feathers which are twisted into a vertical plane, giving the bird a "tadpole" appearance. Has a noticeable dipping flight. Non-breeding dress sparrow-like.

WOODPECKERS, Cardinal, Golden-tailed and Nubian—The Cardinal is a *small* woodpecker, predominant colour above brownish-black, spotted white; the other two are larger and predominantly dark olive-green, spotted white; and both have a crimson streak at angle of jaw, absent in the Cardinal. Distinguishing between Nubian and Golden-tailed not easy, but Nubian has spotted chest, whereas Golden-tailed is heavily streaked all over the underparts. Generally well-distributed, the Cardinal the commonest; often difficult to spot and watch as birds move round behind branch or trunk of tree under observation. Calls distinctive. Cardinal—a trilling “krii krii krii”; Nubian—a very distinctive high ringing cry of sharp notes “kwee kwee kwee”; Golden-tailed—a laughing “waa”.

THE DORY ARRIVES IN TANGANYIKA

By V. T. HINDS, B.Sc., F.Z.S., *Marine Fisheries Officer*

Editorial Note:—A dory is a flat-bottomed skiff used by one or two men, fishing hand lines and long lines at the Grand Banks Cod Fishery, Newfoundland.

Many people still remember the film "Captains Courageous" which portrayed the Bluenose Schooners and their attendant dories away at the cod fishing on the Newfoundland Banks. There were some unforgettable scenes of these fast sailing schooners out of Gloucester, Beverly, Essex, and other towns of the Massachusetts coast, thundering through rough seas with great sails sheeted home hard as they heeled to the strong wind with a bone in their teeth. On deck lashed and stowed nested one within the other like saucers were stacks of small open double ended boats, the dories, in which the cod fishermen would sail into fog and darkness to set their cod lines, and fishing over, miraculously find their way back to the parent vessel. The cod was salted down tier upon tier, and the brine pumped away overside until the solid mass was packed tight to the deckhead. This represented weeks of gruelling work, danger and hardship, but at last the ships headed for the markets, racing home lee gunwales smothered in foam. More recently Allan Villiers has described the life of these dory fishermen in his saga of modern Portuguese motor schooners which go away to this traditional fishing every year.

Lest it be forgotten, mention should be made here of two Norwegian stalwarts who rowed a dory across the Atlantic, west to east (was it in the 'twenties?), surviving in their open boat to reach the French coast, having met freighters *en route* which gave them their position and occasional stores. Unfortunately after putting their boat up for exhibition it failed to attract sufficient sightseers to make the venture profitable!

When a dory was ready and cleared away for launching overside a couple of men went with her and apart from their own gear, mittens, knives, extra clothing and the like, these 18-foot craft loaded a fair weight. They carried the mast and sail, a couple of pairs of oars, anchors and buoys for bottom set lines, and the lines themselves, all neatly coiled down. A hand gurdy was included to haul the lines, and clubs and gaffs to handle large fish were stowed away amongst the rest of the kit. Every dory had its compass and water cask. To-day many dories are mechanized, but basically the equipment remains the same.

The origin of the dory is still a matter of debate and it has been traced back by some authorities to the small flat-bottomed double-ended fishing boats on the coast of Provence, France. The Aran Islanders off the rough west coast of Ireland still use the curragh, a light framed boat covered with canvas and pitch, which rides the sea like feathers. In these high bowed craft they follow the local fishing with longlines and trammel nets, and in season shoot a couple of drift nets for mackerel or herring. The fish is dried and bartered for winter fuel from the mainland. The acknowledged chief of the Aran Islands, Pat Mullen, once told me that many years ago the adventurous young men of the Islands sailed with foreign privateers which visited this wild coast. In the nineteenth century several went to the Newfoundland Banks in American schooners and some became skippers in their own right. Pat Mullen is of the opinion that the



M.F.O. with "Hunky" on trials. Note cathead and bull oars.

curragh had its influence on the design of the dory. Be that as it may, in 1880 Salisbury, Massachusetts, had seven shops producing up to 650 boats per year for the cod fishing. The dory was the first American small boat to be mass produced on a large scale.

The popularity of the boat was partly due to the relatively simple yet very strong construction, and the fact that it could take any amount of rough handling. The thwarts were removable to allow the boats to be nested on the deck of the parent vessel. The removable thwarts have the added advantage of giving more space for the stowage and shooting of gear if required. To make up the strength of the boats a very strong gunwale was incorporated in the design. The high narrow stern gave great safety in a following sea, the moderately low flaring freeboard rose again to a high raking bow, and with a good load aboard these boats handled well. Originally these boats were built of white pine and cedar plank with frames and stern of white oak. White pine was used in the transom and oak in the thwarts. The weight of the boats varied from about 160 pounds at 12 feet, to 300 pounds at 16 feet. Eventually modifications were made and a sailing dory with centreboard, rudder, spritsail and jib was developed by the lobster fishermen of Cape Ann in the late nineteenth century. Further changes were wrought in various localities until offshoots from the dory, originally meant for one job, become legion.

At G. L. O. Grundy's workshops in Pangani, Tanganyika, an 18-foot Gloucesterman dory was recently completed for the Fisheries Section of the Agricultural Department. This has been built by African craftsmen, working

under Mr. Grundy's supervision, exactly to an original 1880 design, taken from Howard I. Chappell's Book, *American Small Sailing Craft* to which reference has been made for some of the material in this article. The boat has been built of local **mtondoro* wood with copper clinched fastenings as in the old design and advantage has been taken of synthetic resin glues—not available to old time builders—in the making of all the joints in frames and planking.

The boat incorporates a medium lateen sail and a cathead in the bow, both adoptions from local sailing experience on the Tanganyika coast. It is fitted with a balanced rudder, and set into the gunwale aft is a special mounting for an outboard engine. With the 4½ h.p. Seagull or Anzani outboard engine the boat makes 5 knots. The gunwale is made up from five pieces of five-eighths inch thick strips plied together with resin glue and copper nails, giving the boat tremendous strength. Four men can lift the dory and walk her up a beach. The boat is specially useful for work in estuaries and lagoons and amongst reefs where a power boat could only go in hazard. She draws only 12 inches of water. When working off coastal villages with open anchorages it is possible to go off through surf with confidence. The main fishing methods, lining, trolling, and net fishing can be worked from this useful little craft.

For those who want a small sailing boat for week-end visits to the coast, a centreboard can be fitted to the dory with little trouble. It is also possible to make a trailer of tubular iron construction with rubber tyres on which the dory can be mounted complete with all her gear ready to be hitched to the back of a Landrover or Jeep. This makes it possible for people living a hundred miles inland to have a day's sailing or goggling over the week-end. In fact it presents many advantages for those who like messing about in boats, not the least of which is its most reasonable cost.

**mtondoro*—khaya nyafica.

MANGROVES

All down the coast of East Africa in deeply indented and sheltered bays and in the mouths of rivers are to be found mangrove forests which play an important part in the economy of the coastal peoples and are a source of revenue to Governments.

Ecologically these forests are best described as evergreen saline swamp forests, their chief constituents being the mangroves *Rhizophora*, *Ceriops* and *Bruguiera*. All are important economically as they are the source of the building poles known as *boriti* used on the coast in native and Arab buildings and exported in vast quantities to the Persian Gulf.

These mangroves have now been dealt with in the Flora of Tropical East Africa—Rhizophoraceae*. The family is represented in East Africa by five genera, the three already referred to and also the genera *Cassipourea* and *Anisophyllea*. A botanical description of the family is given; they are all shrubs and trees and three of the genera, *Rhizophora*, *Ceriops* and *Bruguiera* are viviparous, that is the seeds germinate or sprout when the fruits are still attached to the parent plant.

A key to the genera follows, then each genus is described together with a description of the species in the case of the genera *Rhizophora*, *Ceriops* and *Bruguiera* as these contain only one species each. In *Cassipourea* and *Anisophyllea* there are more than one species and keys to them are provided. Under each species references to the more important literature are given followed by a full description of the species.

After the description the geographical range in East Africa and elsewhere is given as well as quoting collector's specimens from each territory in East Africa.

The genus *Cassipourea* when last monographed in 1925 contained sixty-four species and is distributed from British Guiana in the west to Ceylon in the east. Mr. Lewis records eight in East Africa and in his study of the genus he has reduced quite a number of the species enumerated in the earlier monograph. The Pillar-wood, "Muzaizi", hitherto known as *Cassipourea elliptica* (Engl.) Alston has now to go under the name *C. malosana* (Baker) Alston.

Anisophyllea is represented by three species in the Flora, two of them being found in *Brachystegia-Isobrerlinia* woodland in Tanganyika, Belgian Congo, Northern Rhodesia and Nyasaland; the third *A. obtusifolia* Engl. & Brehm. is found only in evergreen rain forest in the Eastern Usambara Mountains, Tanganyika. It has however a close relative in West Africa, *A. laurina* R.Br. ex Sabine, which occurs in Portuguese and French Guinea and Sierra Leone. This genus as a whole is widespread in tropical Africa, with a few species in India and the Malay peninsula but it has also been discovered quite recently in Tropical America.

*Flora of Tropical East Africa, Rhizophoraceae by John Lewis, Price Shs. 2/6, pp. 1-20 + 5 Figures, 18/10/1956. Published under the Authority of the Secretary of State for the Colonies by the Crown Agents for Oversea Governments and Administrations, Millbank, London.

In this part all five of the genera are illustrated by full plate line drawings, four of them by Miss E. M. Stones and the fifth by Miss D. R. Thompson so that any one with the aid of them should be able to find the genus they are looking for provided they are in the right family.

An index to all the species referred to is provided at the end and both the author and the artists are to be complimented on the completion of a further part of this important and long wanted flora.

Biologically the genera *Rhizophora*, *Ceriops* and *Bruguiera* are extremely interesting in their mode of reproduction and distribution as they are to be found in habitats suited to them on all tropical shores of the world and in their habitat they are associated with certain plants, animals, birds, insects, fishes and shells. The mangrove formations in East Africa still require further study ecologically and both the Forest Departments of Kenya and Tanganyika have a forest officer whose main charge is that of looking after mangrove forests, the produce from which would be rapidly over-exploited. In 1955, in Kenya 431,619 mangrove poles valued at £35,286 and in Tanganyika 125,988 valued at £10,168 were exported. Mangrove bark used as a tanning material is also of value and £4,200 worth was exported to the United Kingdom from Kenya whilst in Tanganyika the bark brought £7,161 of which £5,404 came from the United States. Charcoal is also obtained from mangroves but the value of the poles is far greater than that of charcoal.

Pillar-wood, *Cassipourea malosana* was thought to be of value for telegraph poles but was found to be useless owing to its extremely perishable nature even when impregnated with creosote in pressure cylinders and its main use seems to be for heavy tool handles.

This Flora can be obtained from the Uganda Bookshop, Kampala and all Government Printers in East Africa.

P. J. G.

CALUMBA ROOT

Calumba Root is the source of a drug containing two yellow crystalline alkaloids, jateorhizine and palmatine, and two colourless, crystalline, non-alkaloidal bitter principles columbin and chasmantherin and is used in medicine as a stomachic and bitter tonic. It is obtained from *Jateorhiza palmata* (Lam.) Miers, a lofty climbing plant with annual herbaceous stems and swollen fleshy roots. It is found in Kenya, Tanganyika, Nyasaland, Portuguese East Africa, the Gold Coast and Mauritius and the main sources of commercial supply are from wild plants in Southern Tanganyika and Portuguese East Africa.

Jateorhiza is a member of the Menispermaceae*, this family has now been completed for the Flora of Tropical East Africa by Dr. G. Troupin of the Jardin Botanique de l'Etat, Brussels, and translated into English from the French text by Mr. J. P. M. Brenan, of the Royal Botanic Gardens, Kew, and published by the Crown Agents, London.

Ten genera with thirty species are recorded from East Africa and they consist of twining or rarely erect shrubs or small trees in which the female flowers are found on one plant and the males on another and for this reason Dr. Troupin has provided two keys to the genera which should facilitate the running down by a collector to a genus should he collect specimens of one sex. Three genera are represented by only one species, the largest genus in East Africa, *Cissampelos*, contains eight species.

The family and genera are described in detail, where there are more than one species in a genus keys are provided and each species is fully described. The geographical distribution for each is given along with that outside our region and specimens of collectors are quoted for the different areas in which they are found in East Africa together with the plants' ecological habitat. Synonyms are given where a species has been described under more than one name.

Six full page figures are provided, these illustrate in line drawings seven out of the ten genera dealt with, so a beginner studying the family should have little difficulty in learning the names of the species with which he comes in contact. Five of the drawings are by Miss E. M. Stones and one by Mrs. Milne-Redhead and do credit to both artists as the flowers are small and inconspicuous and they have drawn the parts of the flowers and fruits in much detail.

The author is to be congratulated on his study of this difficult and complicated family, no easy task as the male and female flowers are to be found on quite separate plants.

Chemically the family might well repay study as there are members other than *Jateorhiza palmata* that are of medical use to Africans, and from a fibre point of view *Cocculus hirsutus* (L.) Diels with its thin stems provides the material for the very fine basket chairs and tables woven by the peoples bordering the western shores of Lake Nyasa in Nyasaland.

An index to the genera and species together with their synonyms is provided at the end. The part is available at all Government Printers in East Africa.

P. J. G.

*Flora of Tropical East Africa, Menispermaceae by G. Troupin, Price Shs. 3/-, pp. 1-32 + 6 Figures, 26/10/1956. Published under the Authority of the Secretary of State for the Colonies by the Crown Agents for Oversea Governments and Administrations, Millbank, London.

Correspondence

In No. 44 of the Journal Mr. Yonge raises the question of currency issued by the German Protectorate Government during the 1914/18 war.

It is probable that with the exception of the gold Tabora Sovereign the 5, 10 and 20 heller brass-pieces and the "Interim Notes" no special currency was issued during the war. It was generally believed that the Sovereigns were manufactured by local craftsmen at Tabora from gold mined at Sekenke and that the heller pieces were made in the Railway workshops from brass cartridge cases. The copper heller pieces were the normal currency of the country and had been issued by either the old German East Africa Company or the Protectorate Government. Examples of these are in the possession of the King George V Memorial Museum in Dar es Salaam. It was not until many years later that the story of a die sent out from Germany became current and there is probably as much truth in it as in the story of the Iron Cross for the Commander of the German Forces being flown out from Germany in a Zeppelin.

The interim notes were printed locally and General von Lettow in his reminiscences of the Campaign (Ward Lock & Co.) records: "we lost a considerable amount of notes—I believe it was about 30,000 rupees . . . millions of rupee notes had been printed."

Neither the interim notes nor the brass coins were accepted by the British Administration, military or civil, but the copper coins and the silver German rupee were current until replaced by East African currency. As far as I remember the Tabora Sovereign was not recognized but there was a considerable demand for them from troops from overseas who regarded them as curios. So great was the demand that considerable numbers of counterfeits came into circulation and as the price offered amounted to as much as fifty rupees there was considerable profit in the business. It was generally believed that the counterfeits were made in Zanzibar.

Mr. Yonge makes no mention of the two interesting notes on this subject which appeared in Nos. 31 and 32 of the Journal and I wonder if they have escaped his notice. He will permit me to say that the *Emden* never visited this coast but confined her activities to far eastern waters where at the Cocos Islands, she met her end at the hands of the Australian Cruiser *Sydney*.

G. W. HATCHELL,
P.O. Box 141,
TANGA,
TANGANYIKA

With reference to the letter about Tabora coinage in No. 44 of the Notes and Records, some time ago, it may be a year, I sent you an extract from Dr. Schnee's Book about German East Africa in the first war, concerning the Tabora coinage. This should you still have it, might be of interest to Mr. Yonge.

The Tabora "sovereigns" were coined in the Railway Workshops at Tabora from Sekenke gold. The dies were not brought from Germany by a submarine—no submarine ever came to what was G.E.A.—but were made in Tabora by a German employee of the Railways.

The *Emden* never was in East Africa.

ULRICH TRAPPE,
P.O. Box 252,
ARUSHA
TANGANYIKA

* * *

As a matter of interest, I am attempting to collect and explain all local "foreign" names of places or geographical features in Tanganyika (not streets). It would be as well to record whether they have alternate African names which have preceded them or may possibly replace them.

I would be grateful for any information which you can give me, (this will be duly acknowledged in any article I produce) or if you can put me in touch with any person or institution which might be able to supply me with further information.

Yours sincerely,

NEVILL SHANN,
Provincial Education Office,
P.O. Box 256,
MBEYA

[*Editor's Note:* Any readers who may be able to give assistance should contact Mr. Shann direct.]

Book Review

HABARI ZA WAKILINDI (SEHEMU YA KWANZA)

Abdallah Bin Hemed Bin Ali Liajjemi, "The Journal of the East African Swahili Committee", No. 27, Kampala, Uganda, 1957

Habari za Wakilindi was first printed and published by the U.M.C.A. Press, Msalabani, German East Africa, in three parts from 1900 to 1905. Later, in the first three numbers of *Tanganyika Notes and Records*, Part I was printed in an English translation done by Roland Allen. Now we are very fortunate to have Part I reissued in the original Swahili by the *Journal of the East African Swahili Committee*.

Part I which is considered to exhibit the most excellent literary style is so rare as to be completely unobtainable in its first edition. It is due to the generosity of Mr. B. D. Copland who is in possession of a typescript copy and the perseverance of the editors in tracking it down that this printing was possible. Thus this reprinting is most welcome to all those interested in the dramatic story and the fine style it exhibits. This work has long been considered the best piece of prose written in Swahili and deserves the attention of all those interested in the language and interested in the history of Tanganyika. It deals with the establishment of the Wakilindi as the chiefly dynasty of the Washambaa tribe of the Usambara Mountains, North-eastern Tanganyika.

The story begins with an account of the early wanderings of Mbega, its hero. It tells of how he acquired his wonderful skills and powers and how he first came to the Usambara Mountains. He is a hunter of pigs and a considerable magician and is made welcome by the Washambaa because he is able to protect their fields from marauding pigs and them from human enemies. As his fame spreads, leaders from various parts of the mountains try to attract him to their villages but finally he settles in Vuga. There he is proclaimed chief of all Usambara because of his wisdom, eloquence, and bravery in killing a lion single-handed. A fine section follows telling of the plotting of various villages to present him with a wife thus perhaps obtaining a son with some loyalty to them and so raising that village's prestige and power. Two sons are born by different wives in this way, the first Buge and second Kimweri. Incidents in the rearing and education of Buge follow and Part I ends with the death of Mbega and the succession of Buge.

It is a fascinating story told in a fine style and its reprinting should be a particular satisfaction to all those who like the reviewer have had the pleasure of visiting the Usambaras and hearing the story from old men fearful that it will be forgotten by the modern generation. I am sure that regardless of its somewhat archaic style and the inclusion of a considerable number of Zigua and Shambala words, readers will find no difficulty with the text. The Editors have been most helpful in including a short glossary of words of Zigua and Shambala origin at the end of the text.

It is hoped that Parts II and III may soon be reprinted also. The manuscripts of these two parts are in the possession of the library of the School of Oriental Studies in London and a few copies of the first edition may still be found in East Africa, but they are becoming increasingly rare as time passes. Their reprinting would provide a welcome addition to many libraries just as Part I has done, largely because the editors have made it available as a separate reprint in addition to its appearance in the Journal.

This reviewer for one is hopeful that this is only the beginning in the publication of such material. There are many who could submit stories of great historical and linguistic interest in Swahili, perhaps this will stimulate some into doing so.

EDGAR V. WINANS,
East African Institute of Social Research.

