

B 1,156,408

GUINNESS
STOUT

ESTD 1759

24/23

1991/92

DT

112

S94



Sudan Notes and Records.

Vol. XXV. Part I. 1942

CONTENTS.

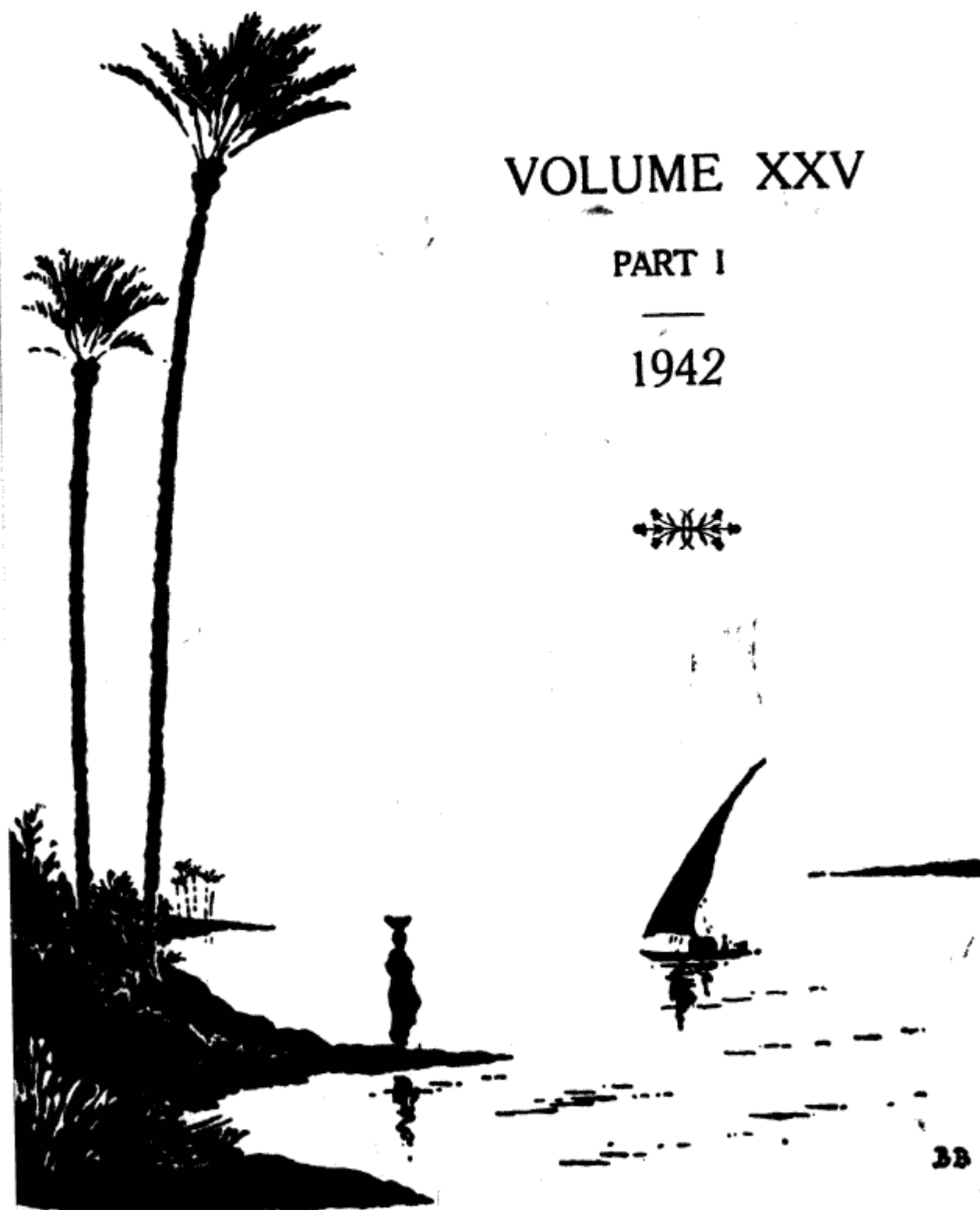
	PAGE.
ARTICLES.	
The Frameless Boats of the Middle Nile. JAMES HORNELL	I
The Hill Tribes of Kadero. S. F. NADEL	37
The Defence of Nyala, 1921. Various	81
Life and Travels of Theodore Kotschy. BEATRICE TOTHILL	109
NOTES.	
The Ascent of Jebel Kassala. R. A. HODGKIN	123
The Dinka Oath on Ashes. J. E. C. MACKRELL	131
The Ordeal by Boiling Water. J. M. STUBBS	135
A Few Cures for Snake Bite. T. R. H. OWEN	137
A Dinka Public Health Measure. NORMAN NUNN	139
Destruction of Mosquito Larvae by Terrapins. D. J. LEWIS	141
REVIEWS.	
Histoire du règne du Khedive Ismail-Tome III 3me Partie. G. DOUIN	143
The Abyssinian Campaigns—The Official Story of the Conquest of Italian East Africa.	155
Water Boring in Uganda 1920-1940. C. B. BISSET	159
CORRESPONDENCE.	
John Ball. D. F. MUNSEY	161
Escape in the Grass. F. O. CAVE	162
Spurwing Goose. VISCOUNT HAWARDEN	163
The Effect on Fish of a Sudden Drop in temperature. A. J. ARKELL	163
The Health of the Sudan before the present Government, A CRUICKSHANK	165

SUDAN NOTES & RECORDS

VOLUME XXV

PART I

1942



SUDAN NOTES & RECORDS

FOUNDED 1918.

Patron : MAJOR GENERAL SIR HUBERT HUDDLESTON,
K.C.M.G., C.B., D.S.O., M.C.

Committee :

Chairman : D. NEWBOLD, C.B.E.,

Members :

F. D. RUGMAN, C.M.G., M.C. R. L. HILL.*
A. J. ARKELL, M.B.E., M.C.* H. W. BEDFORD.
G. C. SCOTT

Editorial Secretary

K.D.D. HENDERSON

Hon. Treasurer :

J. CARMICHAEL.

* Editorial Committee.

The attention of those interested in any special subject is particularly called to the very complete index of the first twenty Volumes of *Sudan Notes and Records* compiled by Mr. F. Addison and printed at the end of Vol. XXI (1938) Part II.

Subscriptions and notifications of change of address, should be addressed to the Hon. Treasurer, *Finance Department*, Khartoum.

Contributions should be addressed to the Editorial Secretary, the Civil Secretary's Office, Khartoum.

The annual subscription, payable in advance, is P.T. 50 or 10s. 6d.

Cheques and Postal Orders should be made payable to the "Hon. Treasurer, *Sudan Notes and Records*."

Payment can most conveniently be made by a Banker's Order, and a form is enclosed with each issue.

Back numbers are obtainable at the following places :—

Editorial Secretary, Civil Secretary's Office, Khartoum.

The Sudan Government London Office, Wellington House,
Buckingham Gate, London, S.W.1.

The Sudan Bookshop, Khartoum.

Transliteration of the Arabic Alphabet

adopted by the Editors of *Sudan Notes and Records*

{	at beginning of	ذ dh (coll. d)	غ gh
	word omit, hamza (')	ر r	ف f
	elsewhere	ز z	ق q (coll. g)
ب b		س s	ك k
ت t		ش sh	ل l
ث th (coll. t or s)		ص s	م m
ج j or g		ض d	ن n
ح h		ط t	ه h
خ kh		ظ z	و w
د d		ع 'e	ي y

VOWELS.

fatha	a,	lengthened	ā
kasra	i,	„	ī
damma	u,	„	ū

DIPHTHONGS.

اي—ai (as in aisle).
او—au (as in mauser).

The *ل* of the article always remains *l*.

The silent *t* (*ﺕ*) is omitted.

NOTES.

1. The system is not applied to well-known names, such as Khartoum, Omdurman, etc.

2. The vowel sounds of *e* in "get" and *o* in "hot" with the corresponding long vowels (*a* in "gate" and *o* in "home"), which occur only in the colloquial, are expressed by *e*, *o*, *ē*, *ō*.

e.g. beled, Moḥammed, bēt (or beit), ḥosh.

Ei may be used as an alternative to *ē*.

Inten
Seyar
8-13-53
83242

TABLE OF CONTENTS.

	PAGE.
ARTICLES.	
The Frameless Boats of the Middle Nile. JAMES HORNELL	1
The Hill Tribes of Kadero. S. F. NADEL	37
The Defence of Nyala, 1921. Various	81
Life and Travels of Theodore Kotschy. BEATRICE TOTHILL	109
NOTES.	
The Ascent of Jebel Kassala. R. A. HODGKIN	123
The Dinka Oath on Ashes. J. E. C. MACKRELL	131
The Ordeal by Boiling Water. J. M. STUBBS	135
A Few Cures for Snake Bite. T. R. H. OWEN	137
A Dinka Public Health Measure. NORMAN NUNN	139
Destruction of Mosquito Larvae by Terrapins. D. J. LEWIS	141
REVIEWS.	
Histoire du règne du Khedive Ismail-Tome III 3me Partie.	
G. DOUIN	143
The Abyssinian Campaigns—The Official Story of the Conquest of Italian East Africa.	155
Water Boring in Uganda 1920-1940. C. B. BISSET	159
CORRESPONDENCE.	
John Ball. D. F. MUNSEY	161
Escape in the Grass. F. O. CAVE	162
Spurwing Goose. VISCOUNT HAWARDEN	163
The Effect on Fish of a Sudden Drop in temperature.	
A. J. ARKELL	163
The Health of the Sudan before the present Government,	
A CRUICKSHANK	165

EDITORIAL NOTE.

The main feature of recent editorial notes has been the forecasting of a future line of action which has not been put into effect. This is regrettable but unavoidable in present conditions.

This number is Part I of Vol. XXV but it will be noted that the date is attached to the part and not the volume. Part II will appear next year and will be devoted to translations and synopsis of the circular letters of M. Eboué, Governor General of French Equatorial Africa. M. Eboué represents a new force in African administration and his circulars cover so wide a field that they will be of undoubted interest to all subscribers to this journal.

When Vol. XXVI will appear remains to be seen but subscriptions paid in 1943 will be credited to subscribers until a final adjustment can be made.

November, 1942.

SUDAN NOTES AND RECORDS

Vol. XXV.

Part I.

1942

THE FRAMELESS BOATS OF THE MIDDLE NILE.

By James Hornell.

REPRINTED BY KIND PERMISSION OF THE SOCIETY FOR NAUTICAL RESEARCH,
PUBLISHERS OF "*The Mariner's Mirror*."

PART I.

The vessels about to be described, however much they may differ in their rig and in details, agree in one fundamental principle of construction—the hull planking is assembled without the prior erection of transverse frames. This is a characteristic in accordance with the practice of Ancient Egypt, and contrary to the universal present-day custom of Modern Egypt, north of Esna.

After erecting the keel upon stocks, together with the stem and stern-posts, the planks to form the strakes are nailed to the keel and to one another, edge to edge, carvel fashion, the long nails or spikes passing obliquely through the seams (Pl. I, fig. 2). In the boats of Nubia south of Wadi Halfa, neither floors nor ribs are present, but in those from the extreme south of Egypt which ply between Wadi Halfa and Shellal, and in one class of related boats between Aswan and Esna, three, five and even nine strengthening frames are inserted *subsequent* to the fitting together of the hull planking; this is a culture element borrowed from the boat-building practice of Modern Egypt. A notable difference from ordinary European boat-building methods is that the planks have to be hewn to the requisite curves, being too thick and intractable to be bent by steaming.

The principal local differences in practice consist of divergences in the character of the rig and in the shape of the two ends. Utilizing these features we are enabled to classify Upper Nile boats into two main groups, each divisible into several local types, in the following manner, namely:

GROUP A :

Wholly without transverse frames ; single vertical mast ; square sterned and with a low prow ; tiller curved.

Local types : (a) Fishing boats and ferryboats of small size, hoisting a true square-sail set with a lower yard or boom. Without shrouds and stays. Found everywhere in Nubia.

(b) The great cargo nuggars of lateen rig that centre on Omdurman, where most are built ; stays very numerous.

(c) The small cargo boats called *markab* which ply in the Dongola bend of the Nile between the 3rd and 4th Cataracts. These carry a narrow oblong sail set aslant on the mast with upper and lower yards.

GROUP B :

With a few inserted ribs. Lateen rigged ; with tiller straight ; prow upturned after the Egyptian manner ; mast or masts raked.

Local types : (a) With the stern square. Found between Wadi Halfa and Aswan. Usually single-masted.

(b) With sharp stern—double ended. These ply between Aswan, Esna, Efdu and Luxor. One or two masts according to size.

GROUP A.

All the craft in this group are built within the limits of the region which it is preferable to call Nubia rather than the Northern Sudan, with which its boundaries roughly coincide ; it is to be understood as inclusive of the whole of the valleys of the White and Blue Nile lying between Singa and Kosti on the south and the 2nd Cataract on the north. This country is inhabited by a mixed people, usually speaking Arabic and predominantly Muhammadan by religion.

The hulls of all the three types of plank-built boats of this region are similar in the principles of construction. One description will suffice for all.

The material is invariably *sunt* (*Acacia nilotica*), an extremely hard wood but brittle and easily cracked. It is difficult to obtain in long running lengths, so apart from the keel, the hull is built up of short sections, halved together in the strakes. The cheaper the boat, the shorter are these sections. Viewing one, we see how apt is the description

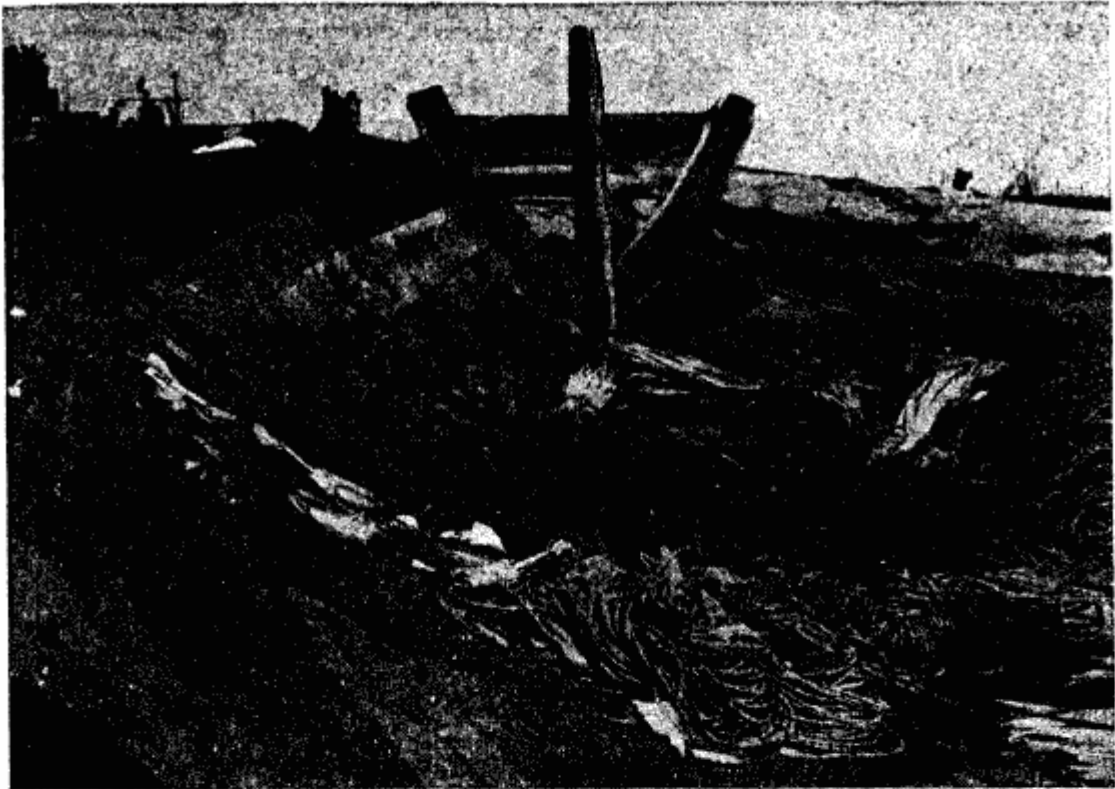


Fig. 1. A nuggar under construction at Omdurman. View inside, looking aft.

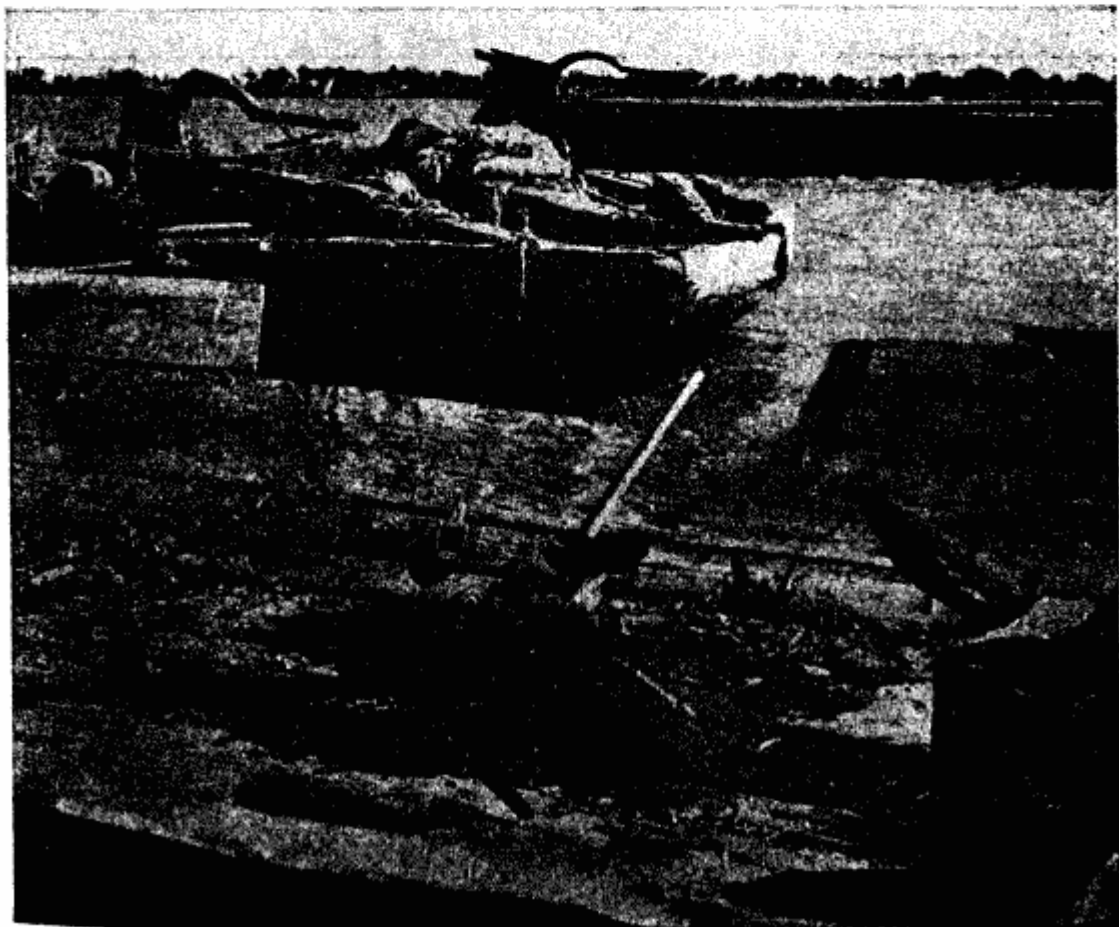


Fig. 2. Interior view of a nuggar under construction, to show the halving and caulking of the strake-plank ends. (*Photos by J. Hornell*).

PLATE II

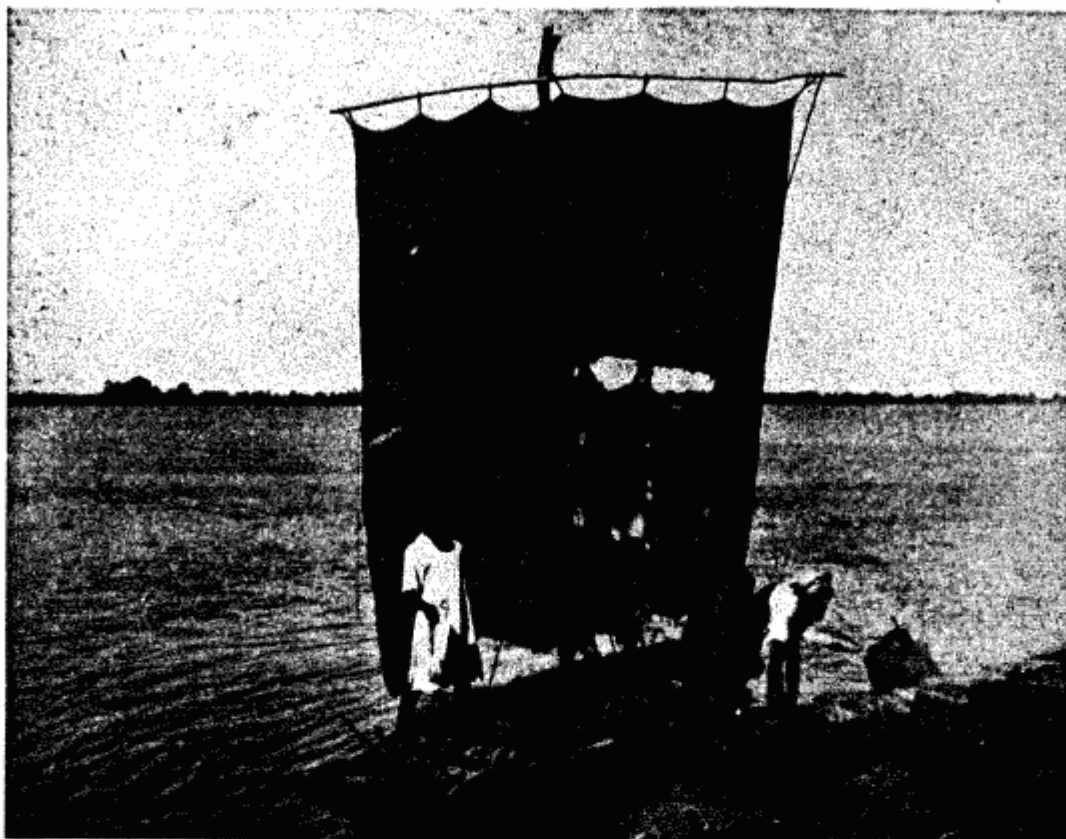


Fig. 1. A fishing boat at Atbara with square sail set.

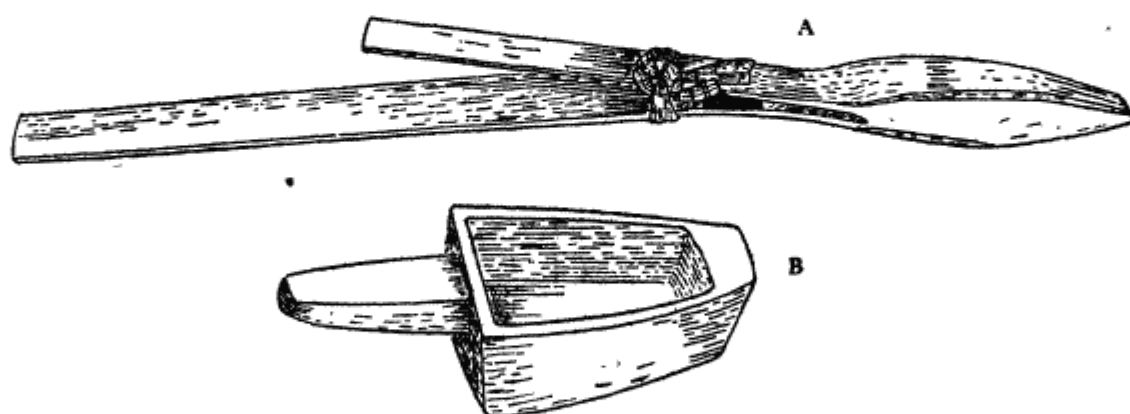


Fig. 2. A large nuggar with her attendant *feluka*, both under sail. White Nile.
(Photos by J. Hornell).

by Herodotus (II, cap. 96) in which he compares the putting together of these short lengths with the laying of bricks in the building of a wall.

Building operations begin as soon as the Nile has fallen sufficiently to lay bare a suitable stretch of foreshore. Here the boats are built and work has to be completed before the river rises again; the flood may even be utilized to float the craft off the stocks and so facilitate launching.

A straight and heavy timber having been selected to form the keel, this is squared, cut to the required length and placed on stocks consisting of three or four short stout uprights set in the sand, with the fore end usually set at a slightly lower level than the stern. A curved stem post is bolted on and held in position by a massive slanting shore. The central section of the garboard strake is nailed to the keel on each side and then the transom stern-frame is built on at the after end of the keel; this consists of a vertical stern post with two

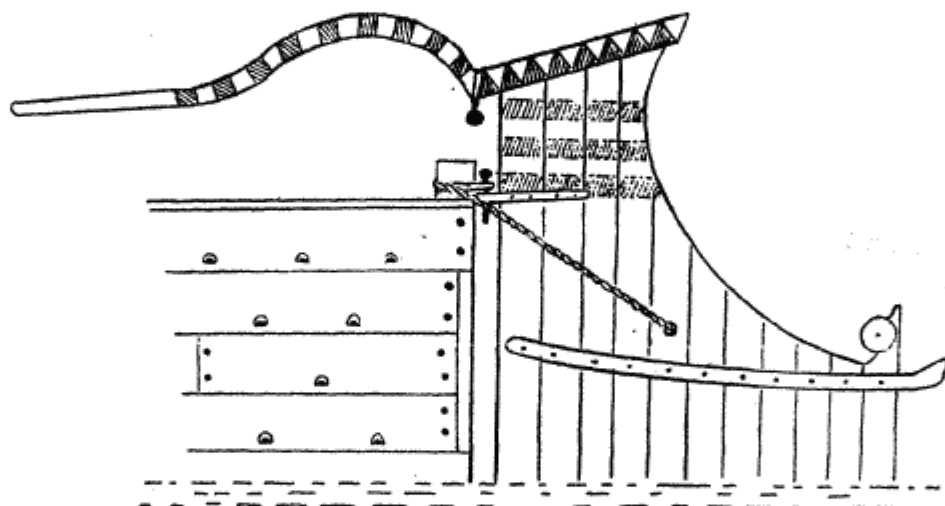


Text-fig. 1. A, Wooden compasses, 18 in. long, used by Sudanese boat-builders, Omdurman. A wedge, marked in black, is inserted to spread the arms, which are kept in the set position by a strip of rag tied distally round the two arms. B, The wooden holder for the paint used in the marking of planks; 8½ in. long.

divergent arms, the whole forming a trident framing, arms upward (Pl. I, fig 1). Cross planking is nailed to the outside of the side arms, with the uppermost plank halved into the stern post on its outer face, and the lower ones rabbeted or spiked into its sides. As we shall see later, a different practice prevails in the Halfa-Aswan region.

After this the sides are raised to their full height, working by eye alone. As will be seen in Pl. I, fig. 1, the floor is nearly flat, curving extremely gently into the sides. The planks used are massive, ranging in thickness from 1½ to 2½ in. according to the size of the boat. All

are worked to shape by an adze, with the correct curve of the edge of each additional plank marked and indicated by means of a form of wooden compasses (*sheba*). This has one long and one short leg (Text-fig. 1); these are dipped into blue water-paint, the long leg run along the edge of the plank already in place, while the short leg runs along the upper and inner surface of the one to be added, thus marking out the correct curvature, which is then worked down with the adze. As each plank is added, long iron nails are driven at an angle from the upper plank so as to pass obliquely through the seam into the plank below. These nails or spikes are generally driven in alternately from the inner and the outer surface of the planking, the heads



Text-fig. 2. Rudder and tiller of a large nuggar. Decoration of the tiller and rudder head. At the outer end of the rudder, above the long batten, is the round disk and point of the "position-indicator." An amulet hangs from the tiller and the recessed heads of the nail heads above each seam are indicated.

recessed as in Text-fig. 2. As the planks are seldom long enough to form an entire strake, two or more short lengths have to be used. The ends of these at each joint are normally halved into one another, and secured with two nails, clenched on the outside (Pl. I, fig. 2). Occasionally a plain butted joint is seen, caulked to make watertight, but this is not characteristic of good workmanship.

When the last strake is in place, numerous cross-beams are fitted, their ends passed through recesses cut in the upper edge of the top strake and showing on the exterior. Thereafter the sides are finished

off with a flat gunwale board and the deckings and bollards as required in each particular type. Finally the seams are caulked with rags from the inner side. None of these boats is ever tarred or painted. The mast is fitted amidships and is always single and vertical.

The rudder is particularly large and powerful, formed of vertical boards held together by cross battens. The tiller of all Nubian boats built south of the 2nd Cataract is distinctive. Between the straight butt, slotted to fit over the several planks of the rudder head, the tiller arm rises in a long, gently curved arch before flattening into the straight part of the arm. No other Nile craft has a tiller of this shape.

In none of these Nubian boats is there more than the gentlest sheer toward the fore end, if indeed there be any. When laden the gunwale is practically horizontal throughout its length. Underwater, however, the forefoot region has a slightly greater draft than the stern, an arrangement of value whenever the boat grounds on a sandbank; with the forefoot only aground, the current tends to swing the stern round and this, helped by the crew with their punting poles is often sufficient to float the boat off.

In other respects—size, deck arrangement, and particularly rig—there are considerable variations, which will now be described. The tools employed by Nubian boat builders consist of a frame-saw, hand-saws with parallel-sided blades, an adze, an axe, a claw hammer, a wooden mallet, a rude auger, a triangular file, a semicircular gouge, a pair of wooden compasses (Text-fig. 1 A), a wooden paint pot (Text-fig. 1 B), and a measuring stick.

Type a. Nubian fishing and ferry boats.

Boats used for the purpose of fishing and those for ferrying are sometimes interchangeable according to the needs of the moment. *Gharab* is the generic term commonly applied to all. Those specifically built for fishing are the smaller in size, are notably narrower in the ratio of beam to length and the fittings of necessity are different. The last-named consist of sagging palm-fibre stringings between the second and the third thwart to form a hammock-like receptacle wherein to

throw the fish as caught and killed. Aft the mast another pair of thwarters are similarly fitted to provide a second fish-bag.

Three representative examples of fishing boats registered at Khartoum have the following dimensions :

Reg. no.	Length in metres	Maximum beam in metres	Maximum girth in metres	Capacity in ardebs	Crew	Ratio of length to beam
5462	7.45	2.00	2.80	10	2	3.72
5450	7.25	2.15	2.91	11	3	3.37
5457	7.75	2.30	2.92	13	5	3.37

Others registered at Ed Damer, Berber Province, showed greater variability in dimensions as seen below :

3670	8.20	1.99	2.23	11	3	4.12
3671	5.72	1.59	2.12	5	3	3.60
3672	5.91	1.71	2.29	6	3	3.46

The average ratio of beam to length in these is 3.73, while that of the Khartoum fishing boats at 3.49 bespeaks greater relative beam. In both series the number of beams in the length is nearly one-third greater than in the ferryboats.

Boats registered specifically as ferryboats vary still more in their dimensions, more particularly in the ratio of length to beam.

Typical examples taken from the Khartoum register are :—

Reg. no.	Length over all metres	Beam metres	Girth metres	Burden in ardebs	Crew	Ratio of length to beam
5565	7.30	2.30	2.90	12	2	3.17 : 1
5572	8.00	2.35	3.00	14	2	3.40
5573	7.40	2.80	3.40	17	2	2.64
5571	7.70	2.70	3.50	18	2	2.85
5564	8.40	2.90	3.60	21	2	2.90
5575	8.40	3.55	4.40	32	2	2.37
5567	10.46	4.70	5.70	68	4	2.23
5569	11.70	5.10	6.15	87	3	2.30

Here the average ratio of length to beam is as 2.73 : 1, that is, the length on the average is approximately equal to $2\frac{3}{4}$ times the maximum beam, as against $3\frac{3}{4}$ beams for fishing boats.

An *ardeb* is equal to a capacity of 198 litres. $7\frac{1}{2}$ ardebs of wheat weigh approximately one ton.

In ferry-boats there are no deckings nor any fittings except a stout bollard usually present amidships just abaft the foremost cross-beam, required for mooring purposes. The normal number of cross-beams is seven; three forward and three aft with the main beam amidships on the fore side of the mast. These cross-beams are made of the outside slices sawn from tree trunks and are fitted sawn side upward to serve as seats for the passengers. Floating light, these boats have a draft of about 8 in.; laden, from $2\frac{1}{2}$ to $3\frac{1}{2}$ ft. (see Pl. III, fig. 2).

The mast is fitted vertically abaft the main cross-beam. In the better class boats it is a straight pole, terminating either in a crutch or else having a sheave hole at the top. Other owners are content to fit a rough jungle pole, crooked and unsightly, for these ferrymen are often poor and their boats the worst equipped of any. Sometimes the mast is in two sections, spliced and nailed together.

The sail used both in fishing and ferry-boats is a thin square-sail, usually of cotton, sometimes of hessian, arranged in vertical strips, sewn together. Old flour-bags, opened out, are often used. The head of these poor sails is tied at intervals to a light yard, set at the masthead by means of a halyard passed over the crutched top of the mast or rove through a sheave hole if one be present. The foot of the sail is free, without boom or lower yard. It is controlled by a vang at each end of the yard and by a sheet at each lower corner, exactly as we see depicted on the girdle wall of the Temple to Horus at Edfu, in the scene where the god, standing on the deck of a square-sail boat, is seen in the act of spearing a hippopotamus. When not in use the sail is bunched together and given a couple of turns round the mast, and secured in any makeshift way. Shrouds and stays are entirely lacking.

As is usual with Nubian boats, the hull is neither tarred nor oiled; it remains naked throughout its existence, for sunt wood is highly resistant to rot and woodborers.

Every fishing boat is furnished with a couple of oars, plied by a man seated on the thwart immediately forward of the main or mast thwart. These oars may be of either of two kinds. In one they are

shaped like the sweeps of the cargo nuggars; these have a long loom ending in an equally long upcurved blade, spliced on, and with a perforated cleat block nailed to one side of the loom at gunwale distance. When wanted for use a rope grommet passed through the hole in the side cleat is slipped over a thole-pin on the inner side of the gunwale. This thole-pin is a fixture, its lower part nailed to the side planking and with the gunwale board recessed to receive it.

The other and more common form of oar in fishing nuggars has a balanced loom sometimes in one with the thin, upcurved blade. The balance is obtained by making the inboard part of the loom thick and cylindrical, often in the natural, untrimmed condition with the bark still on. The thickened loom has a grommet hole at gunwale distance, with, usually, a perforate cleat nailed to the side as in the ordinary form (Text-fig. 4 B, C). The perforations are both rectangular. Such an oar is worked on a thole pin with the grommet passed through either of the loom holes.

Type b. Cargo nuggars plying south of the fourth Cataract¹.

These vessels, known usually by the name of nuggar (*naggr*) in the waters where they ply, have hulls built on the general lines already described, but they differ radically in their rig which is a powerful, high-peaked lateen.

Since the overthrow of Mahdism, trade has grown enormously throughout the middle region of the Sudan where these boats are found. This is due partly to a great increase in the population, partly to the enterprise of traders, but mainly because of the prosperity wrought

¹ At the time when I wrote the article, *The Outrigger Nuggar of the Blue Nile*, published in *Antiquity* for September 1938, I had not seen any of these craft; since then I have examined several and I find that a few statements require to be emended. The chief of these are the following:

(1) The rudder is not slung without gudgeons and pins; the rope lashing is a "preventer" fitting, additional to the gudgeons and pins.

(2) Although a tracking pole may replace a mast when these boats use the outrigger, an unshipped mast and yard are carried, ready to be set up when required.

(3) The sweeps do not work in forks at the ends of the booms, but on thole-pins as described in the present text.

by the introduction of cotton cultivation and its growth on an ever increasing scale. In the transport of produce, the river is an essential factor, though the railway and motor transport compete vigorously with it. On the river itself the Government-owned cargo steamers carry a large proportion of the heavy traffic ; even so, the native sailing craft continue to flourish and to increase both in numbers and in dimensions.

Abu Ruf, a northern riverside extension of Omdurman, is the greatest of the boat-building centres. Others are situated at or near Wad Medani, Singa and Ed Damer. The dimensions and proportions of these craft vary widely and there can be no question of scientific calculation or procedure in ascertaining the correct curvature of the transverse sections of the hull as suggested by Jarrett Bell¹ in regard to the related boat designs of Ancient Egypt ; nor of any but rule of thumb methods for determining the proportion of beam to length. Everything connected with the design is based upon empirical knowledge. The eye, assisted by what through long experience has become instinctive intuition, is the boatbuilder's chief reliance. It is remarkable how skilful are many of these men. With the simplest of tools and in spite of the brittle, intractable nature of the sunt wood on which they rely entirely, they produce excellent models, stout enough to transport loads that sink them to within a few inches of the gunwale, and with stability adequate to enable them to carry their great sail with safety in strong winds.

The hull is built after the design followed in the construction of ferry-boats, with such increased strength as is commensurate with greater size. A single massive bollard (*sham'a*) is fitted midships between the bows. In some a fore weatherboard is nailed upon the gunwale on each bow, and often a tilt-roof cabin (*aēsha*) made of wickerwork covered with matting, arches over the waist from gunwale to gunwale, abaft the mast. Many of the larger have a crutched post in the bows on which hangs a drum (*nugāra*) used for signalling.

¹ "Ancient Egyptian Ship Design," *Ancient Egypt and the East*, 1933, pp. 101-10.

The keel is particularly stout; on the underside from about amidships to the forefoot it gradually increases in depth till it reaches a maximum projection of from 2 to $2\frac{1}{2}$ in. at the forefoot and is often left rough. This increase in depth is provided in order to take the extra wear occasioned by frequent grounding. These boats are usually loaded so as to be slightly down by the head; as the fore end normally grounds first, this arrangement facilitates the work of getting free. At the after end the keel projects from 1 to $1\frac{1}{2}$ in.

So varied are the dimensions of different nuggars that the following particulars of a dozen taken from the Khartoum registers are necessary to enable a just estimation to be formed of the wide range in size and proportions found among them.

Reg. no.	Length over all metres	Beam metres	Girth metres	Burden in ardebs	Crew	Ratio of length to beam
5445	10.79	4.30	5.45	62	4	2.51 : 1
5451	9.30	4.00	5.20	47	4	2.33
5452	15.50	6.40	8.15	197	5	2.42
5454	16.35	5.90	7.42	174	7	2.77
5455	12.50	5.20	6.72	107	4	2.40
5456	17.90	7.20	9.07	284	8	2.49
5458	18.80	7.25	9.15	303	6	2.60
5463	14.60	6.00	7.70	164	6	2.43
5464	12.10	5.13	6.58	100	4	2.36
5465	13.50	5.70	6.90	129	6	2.37
5466	8.40	3.80	4.36	34	3	2.21
5467	9.20	3.94	4.80	42	3	2.33

The great beam of these boats is their most notable feature, for the average works out at 2.435 beams in the length, thereby exceeding even the great relative beam found in ferry-boats (2.73).

All are built of sunt wood and all are one-masted. The only example which has two masts is one registered at Wad Medani; its dimensions are: length over all 13.70 m.; max. beam, 6.50 m.; max. girth, 7.50 m.; burden, 183 ardebs. Generally the nuggars registered at Wad Medani, Singa and Ed Damier are smaller than those of Khartoum.

The larger of these boats traffic as far south as Malakal; the smaller ones penetrate to the limits of navigation on the Nile and its tributaries.

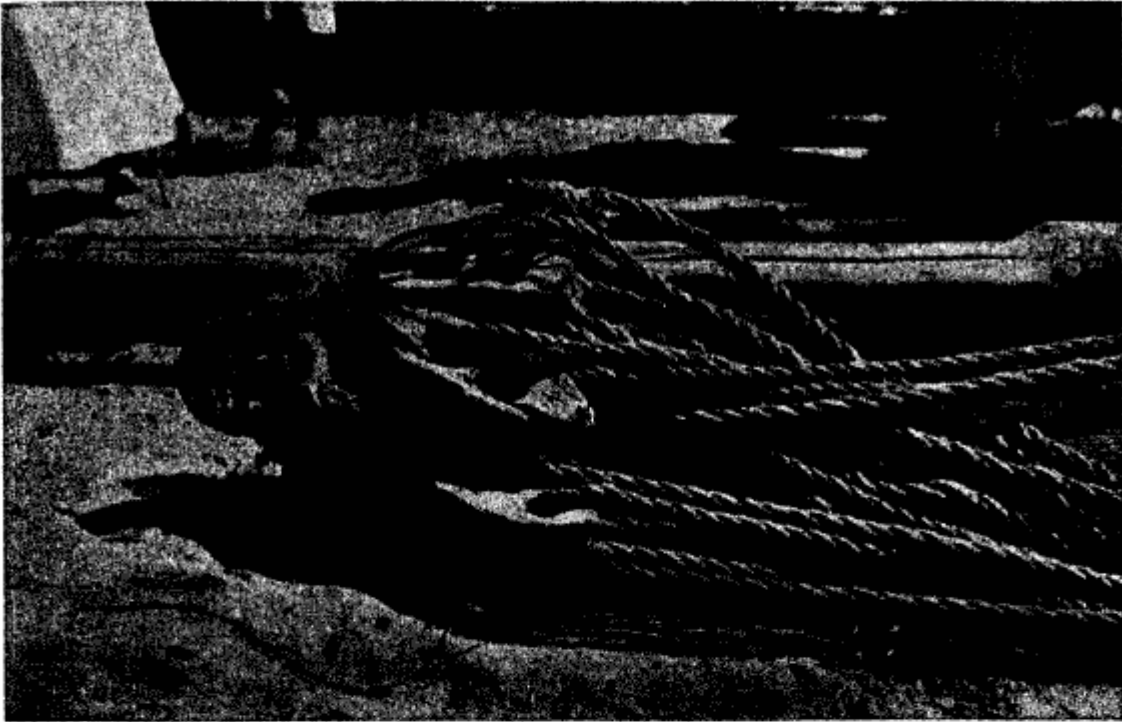


Fig. 1. Masthead of a nuggar showing many double dumb-sheave blocks and two halyard holes in the mast affix.

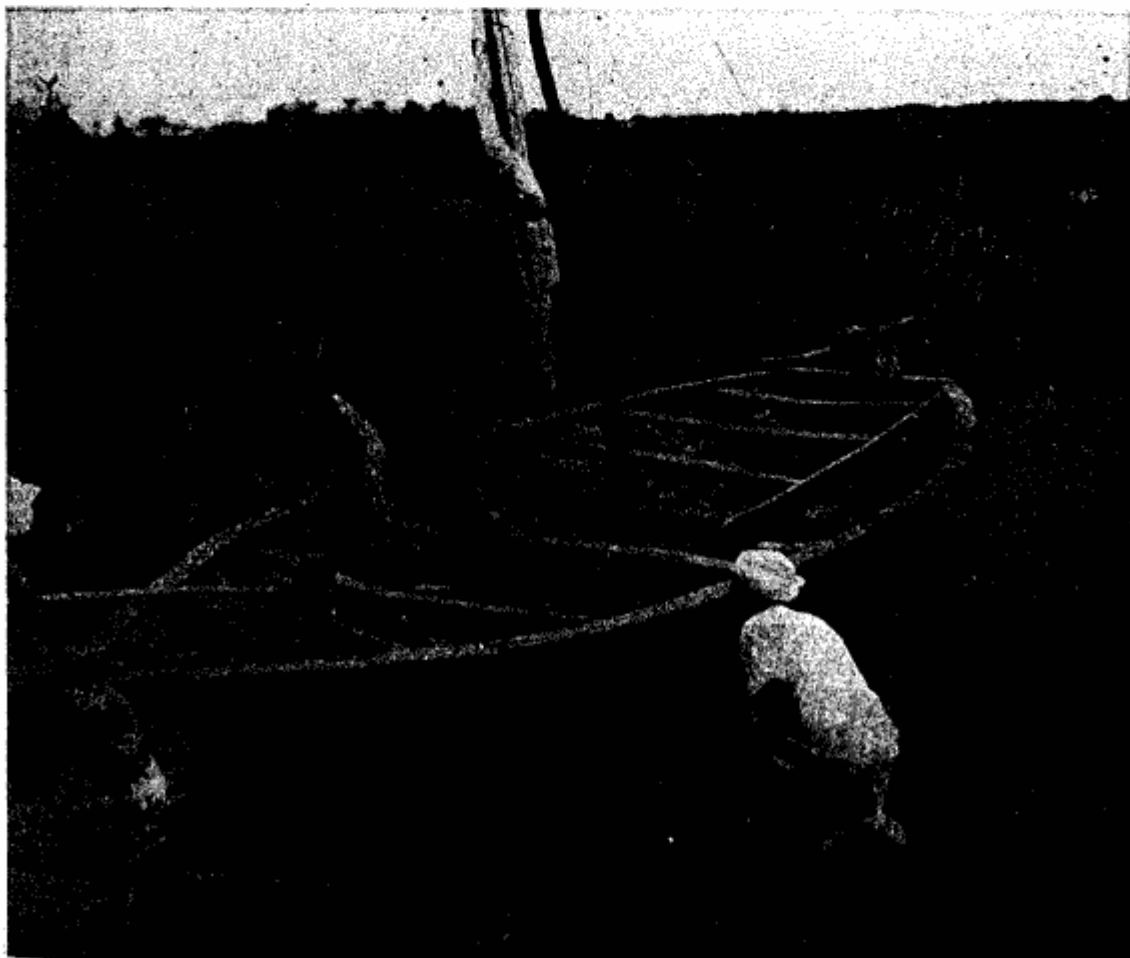


Fig. 2. Small nuggar (*gharab*), used indifferently as a ferry-boat and a big-nuggar's tender (*feluka*). (Photos by J. Hornell).

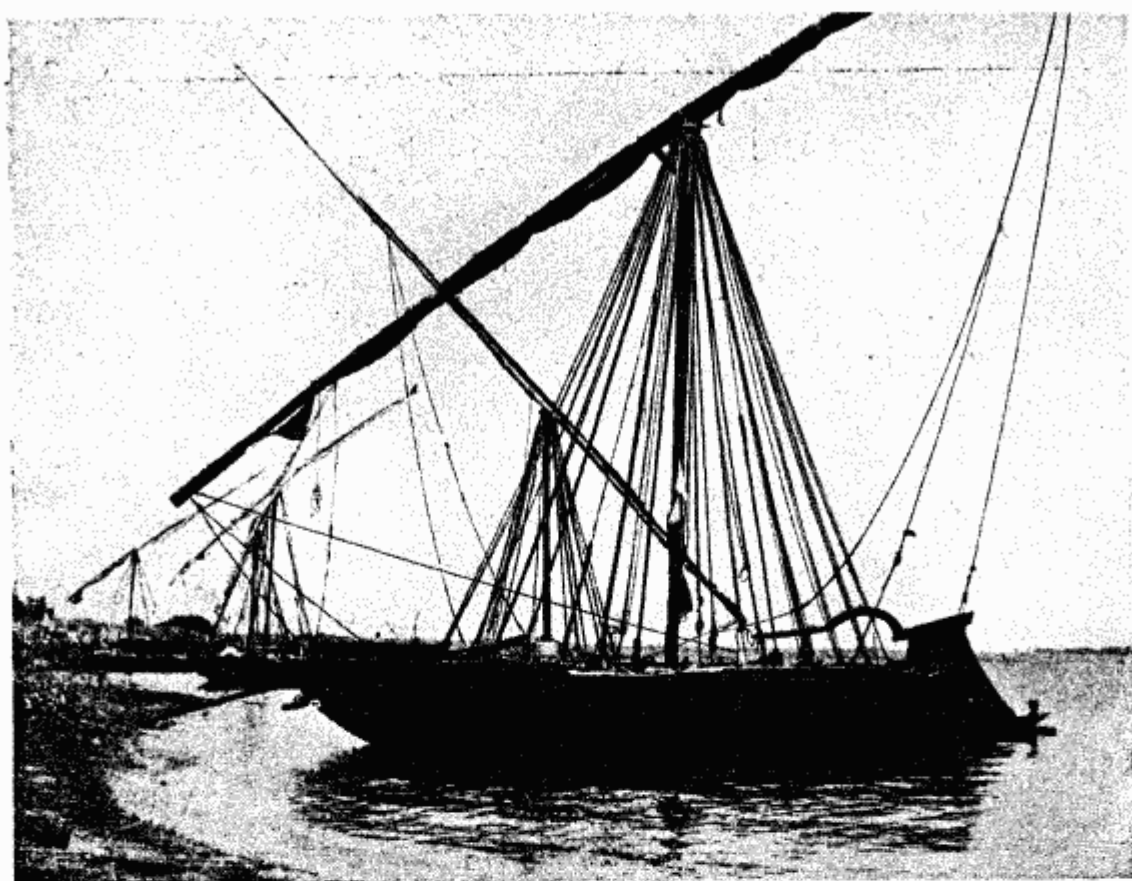


Fig. 1. A large nuggar at Omdurman ; stays very numerous.

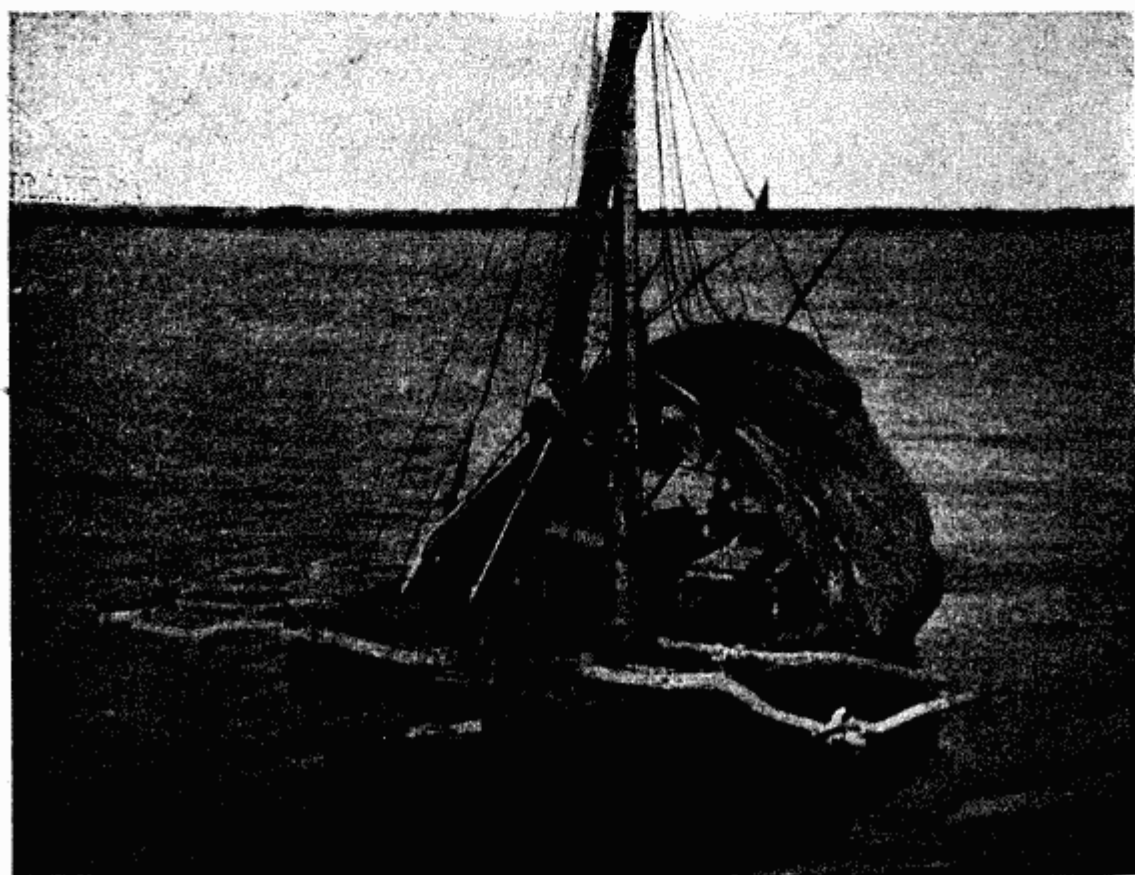


Fig. 2. A small nuggar at Malakal fitted with outrigger rowing frames.
(Photos by J. Hornell).

Few have any decking. They are built essentially to carry the maximum load of heavy cargo, such as bagged grain, bricks and sand in bulk, firewood and other rough cargo. For these any form of decking is unnecessary and would interfere with stowage; even grain in a dry climate needs no protection apart from mats or tarpaulins, and it is a great advantage in heavily laden boats with very low freeboard to keep the centre of gravity as low as possible.

Rudder. This is formed of a number of boards set edge to edge, held together by battens on both sides. The number of boards varies according to their width; usually they are 10—11 in. wide, so that a rudder of 10 ft. in length will often be made up of 11—12 vertical boards. The proximal three or four are the longest and form the rudder head, over which the slotted butt of the tiller fits. Aft the head the upper edge curves sharply downwards a few inches, to merge into the slightly sloped upper edge of the outer section of the rudder blade (see Text-fig. 2). The upper end of the outermost board projects about 4 in., carved on the fore side into a rounded disc while the after side is prolonged upwards into a blunt point (Text-fig. 2). I am uncertain whether the explanation given by an old Rais is correct or not; he stated that this projection serves to indicate the rudder's position when the vessel is so heavily laden that the main part of the rudder blade is submerged.

The rudder is hung on the sternpost by means of two pairs of gudgeons, each pair held together by an iron pin passed through the gudgeon holes—a fixed pintle is not used. The upper gudgeon on the sternpost is formed by a projecting loop given off from an iron collar around the sternpost head. In addition a stout preventer rope, passed through a hole in the rudder planking about a foot or so below the head and from 12 to 20 in. from the near edge, is made fast round the head of the sternpost, which projects well above the stern gunwale (Text-fig. 2).

The tiller as in all Sudanese boats south of Wadi Halfa is arched immediately inboard from the rudder head, merging into a straight grip at the free end. Length about 9 or 10 ft.

Mast and rigging. The mast is vertical and is stepped approximately amidships. It is peculiarly massive and often is roughly squared.

The outstanding characteristic of these boats is the extraordinary number of shrouds and stays on each side. No distinction save position is apparent among them ; as all are provided with purchases, I propose to call them all stays. The number is very variable, correlated with the size of the vessel and the traffic in which she is engaged. They range between six to as many as eleven on each side—twenty-two in all in the largest one examined ; in this particular one there were five forward of the mast, five abaft it and one nearly abreast of it (Pl. II, fig. 2). In addition a halyard was made fast on each side abreast of the mast and functioned as an additional stay or shroud. The reason for this great number is the same as that for the presence of a longitudinal truss in ancient Egyptian vessels—the need to prevent hogging ; they also help to prevent spreading. It is remarkable how resistant to longitudinal strain these boats are, but it is evident that in the case of Sudanese nuggars laden with very heavy loads of dead weight, such as bricks, their natural strength and rigidity require reinforcement to counter the strains set up, both longitudinal and transverse. This has been obtained by multiplication of the number of stays, fitted in the manner now to be described.

Each stay consists of a luff-tackle purchase, a double block above and a single one below, both blind, without sheaves. The double block is hung from one of the loops pendent from a collar encircling the masthead, while the lower one is made fast by lashing passed round one of the cross-beams and thence through the sheave hole and then repeated so that the lashing is doubled. When the stay has been hauled tight, the fall is given a couple of turns around the stay above the lower block and made fast. The foremost two (or sometimes four) run directly forward and may be considered as functional forestays. The remainder are side stays, spaced at regular intervals co-incident with the disposition of the cross-beams to which they are made fast below.

To protect the masthead loops from the friction of the yard, the masthead has a capping of skin, slit into holes around the edge, through which pass the suspending loops. In some of the double dumb blocks the sheave holes are placed tandem (Pl. III, fig. 1); in others they are side by side.

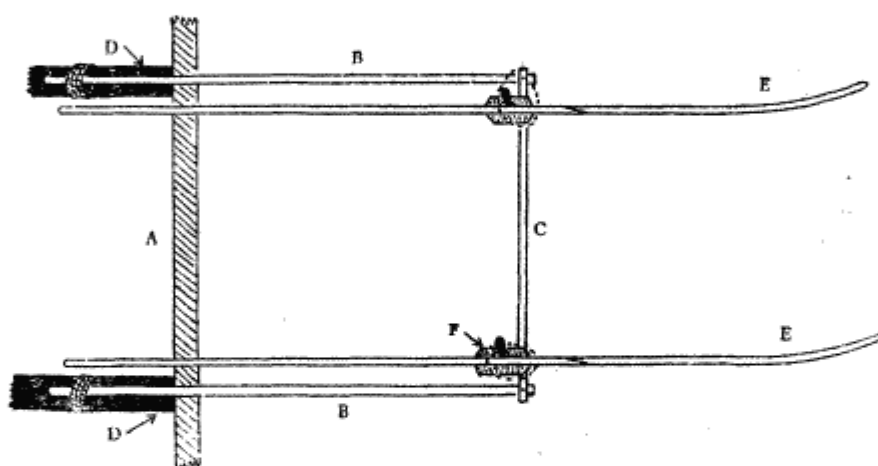
The sail. This is a typical lateen, fully triangular, i.e., it has not the fore corner cut off as in Arab seacraft. The yard is of great length so that the peak may be raised high to catch the wind when making a passage during low Nile when the banks rise high out of the stream (Pl. II, fig. 2). It is invariably made of several sections, spliced and fished together. Unlike the *Gyassa* of Egypt, the heel is not weighted to hold it down, sufficient control being obtained by means of a whip and of a strong single tack-rope led aft from the heel of the yard (Pl. IV, fig. 1).

In the small and medium-sized boats two vang's control the peak, but in large-sized vessels three and even four are in evidence, all made fast to the yard at the same point (Pl. IV, fig. 1). The free end of each is rove through a loop in the strop of the upper block of a gun-tackle purchase, and then made fast to itself. The lower blocks in the tackles of the two true vang's are made fast respectively to a ring at each outer corner of the transom, within reach of the steersman. The extra one or two when present are attached further forward. One, two or even three of these vang's may fly small rectangular flags of various colours, hung about two-thirds up.

Each of the two halyards usually present is rove through one of two holes set side by side in a masthead affix nailed against one side of the masthead; this perforated end rises above and just clear of the skin or sacking capping of the masthead; as the halyards reeve through from the outer side—the side where the affix is nailed on—the yard when hauled fully up, rests upon the hide-covered padding of the masthead (Pl. III, fig. 1).

The outrigger. During a cessation of the north wind or when it is adverse during a voyage, an outrigger frame is commonly fitted. This consists of a pair of stout booms (*gasitin*) which project outboard on each side, forward of the mast, 8-10 ft. or even more, according to

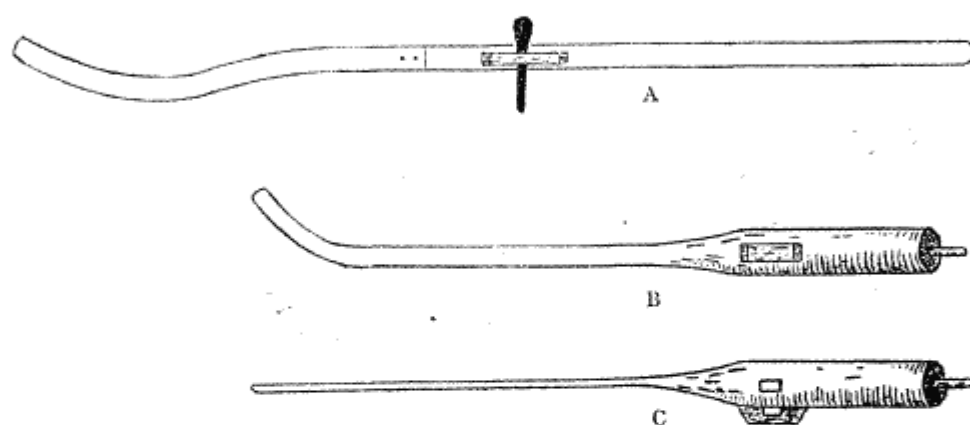
the size of the boat and the height of the cargo stacked on the cross-beams. The inboard ends are lashed down to two of the cross-beams, the lashings often tightened by means of the Spanish windlass as in Ancient Egypt, whereas the outboard ends are connected by a pole, the boom bar (*madada*), lashed or nailed on (Text-fig. 3). Using the boom bar as a fulcrum, a boatman standing on the top of the deck load is able to ply his sweep (*magdāf* or *makdāf*, pl. *mugadīf*) with a pushing stroke most effectively. His normal position is standing, facing toward the direction the boat is going. Four sweeps are used,



Text-fig. 3. Diagram of an outrigger frame. A, the position of the gunwale; B, B, the outrigger booms lashed to cross-beams (thwarts) D, D. C, the outrigger boom-bar. E, E, the two sweeps pivoted on the black thole-pin, passed through the loom-cleat F.

two on each side. These vary in length with the size of the vessel; the larger run from 36 to 40 ft. in length. They are made up of two or even three sections spliced together. The loom is straight, usually squared, the blade long, narrow and curved upwards vertically (Text-fig. 4 A). On one side of the loom is a thole-pin block or cleat (*buggith*) nailed on, with a counterpoise block on the opposite side. A typical sweep measured 18 ft. from the grip to the thole-pin hole in the side block and 20 ft. from this point to the extremity of the blade. The thole-pin block and its counterpoise were 36 and 38 in. long respectively. An iron ring-bolt (*halaga*) is often fitted to the loom at the near end of the blocks.

Each thole-pin (*khabûr*) is a rather long, stout peg thickened toward the upper end. When the outrigger is in use, a thole-pin is passed through the hole in the loom block and the sweep passed through a grommet of rope, wire or chain, fitted around the boom bar. In the case of the after sweep this grommet passes around both the boom bar and the adjoining boom end. Attention is drawn to the fact that the thole-pin may be termed "free," in that it is not a fixture in the outrigger frame nor in the gunwale, but may be considered as an integral part of the sweep itself.



Text-fig. 4. A, an outrigger sweep, showing the thole-pin passing through the side cleat on the loom. B and C, fishing-boat oars ; B, in side view ; C, seen from above to show the grommet holes in the thick loom and the side cleat.

When working these sweeps, at the beginning of a stroke each man immerses the blade so deeply that his hands, gripping the end of the loom, are raised high above his head. This done, he takes five or six steps forward, in time with his fellows. At the end of the stroke, the rower makes a powerful lunge forward, putting all his weight into this final effort. The stroke finished, he raises the blade clear of the water by bringing down his hands ; then, turning to face toward the stern, he walks aft till he reaches the position for the re-immersion of the blade.

When the nuggar is light, and more easily propelled, the men row seated on the thwarts, facing aft.

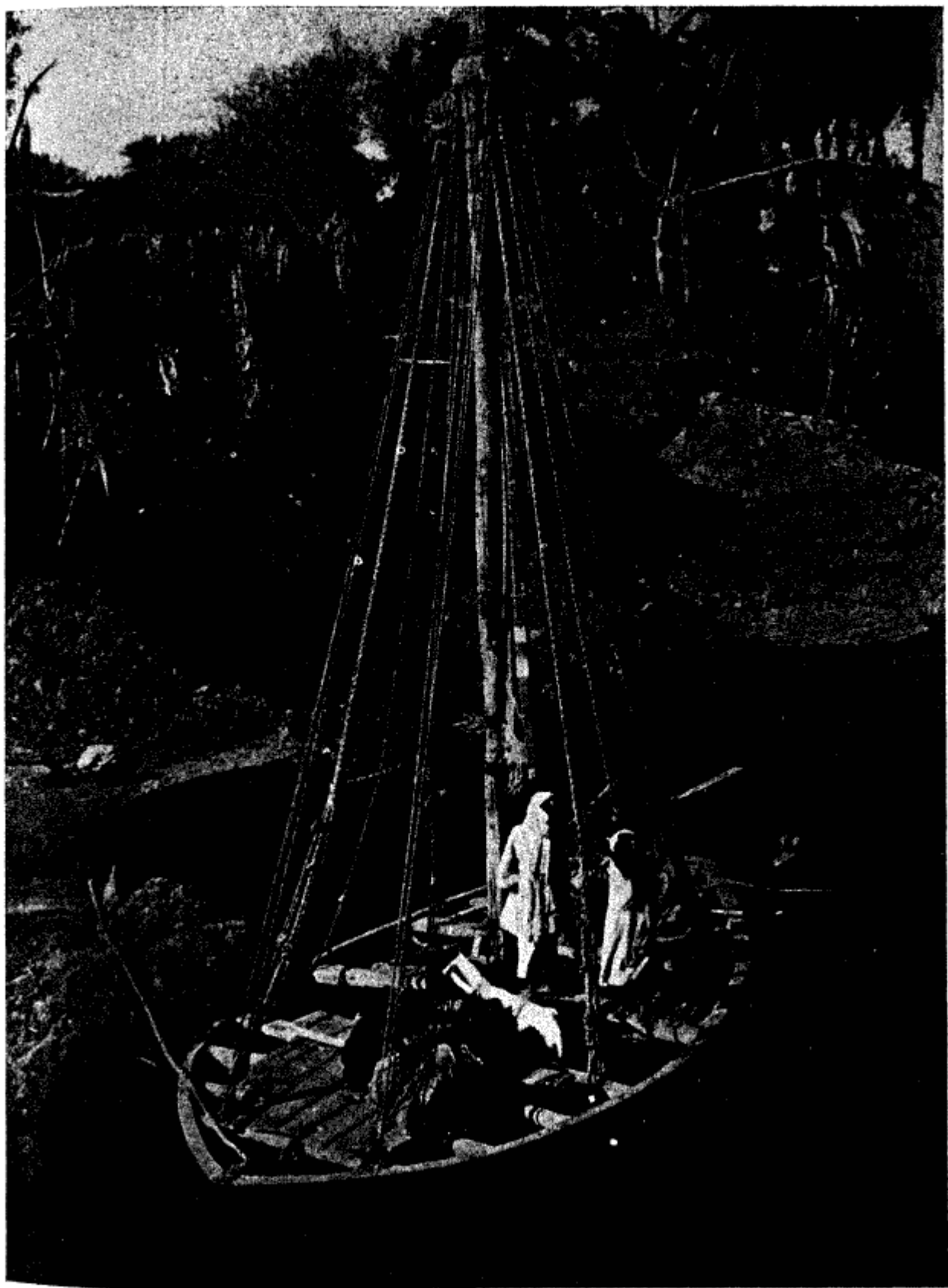
If the calm or the adverse wind is expected to last, or when reaches have to be navigated where it is known that the wind will be unfavour-

able, the outrigger is fitted and may be used without lowering either the mast or the yard, especially when the boat is light or only partially laden. With a heavy cargo, such as bricks, a stout crutched post is set up on the after side of the midships bollard (*sham'a*) in the bows. Resting the lower end horizontally in the crutch, the yard is secured aft by a lashing around the mast at the same height as the head of the crutch. On the Blue Nile where the outrigger is in even greater evidence than on the White Nile, both yard and mast are unshipped when the outrigger is in use. The mast is laid fore and aft on the cross-beams, while the yard is disposed in the same manner as in the White Nile nuggars, with the difference that a light pole (useful when tracking upstream as an alternative to rowing) is substituted for the mast as a support for the after part of the yard. Further support is afforded by the top of a tilt-roofed cabin, wicker-framed, placed abaft the mast, usually present in Blue Nile nuggars.

Amulets. One or often two amulets (sing. *hegib*) are commonly tied to the tiller at the sharp turn forward of the slotted butt end (Text-fig. 2). In one instance where there were two, each consisted of a cube of red sandstone, about $1\frac{1}{4}$ in. square. Charms of this description are said to be taken from the grave of a holy man (*fiki*) with the object of "preventing the boat from sinking."

Decoration. This is restricted to geometrical designs on the upper part of the rudder and to coloured bands on the tiller. The hull of the boat is left in its original condition; no form of preservative is used.

Attendant craft. The larger nuggars may have a smaller boat in attendance, called a *feluka*. These vary considerably in size; they have about the same range in dimensions as the ferryboats and are similar in build. They carry a mast and lateen sail (Pl. III, fig. 2).



Ferry-boat on the Dongola reach, 1939. (Photo by J. Hornell).

PART II.

THE DONGOLA MARKAB.

On the great bend of the Nile between the Third and Fourth Cataracts the type of craft employed in local cargo traffic carries an oblong sail set diagonally on the mast (Pl. Ib), a form unknown elsewhere in Africa and without parallel until we reach the Malay Archipelago. These strangely rigged boats go locally by the name of *marqab* or *markab* (pl. *marakib*); the name *nuggar* (*naggr*) applied to them by some writers pertains properly to the boats used above the Fourth Cataract, from Berber to Khartoum and beyond, if we follow local custom.

A typical boat of medium size belonging to this type was measured at Kerma, situated just above the Third Cataract, in 1938.

Hull. This, in common with all Dongolese markabs, is built of sunt wood. The planks vary in length and width; an average size is about 6 ft. in length, $2\frac{1}{4}$ — $2\frac{1}{2}$ in. thick and about 12 in. wide. The keel is specially selected from the straightest and longest baulk available, and much trouble is taken to secure one which does not require to have a lengthening piece spliced on. It is carefully squared and projects about 1 in. beyond both the inner and the outer surface of the garboard strake. On each side of the keel in this boat are ten strakes, fitted together as in the hulls already described. The design of the stern transom is substantially the same as in the Khartoum type, differing only in minor details. In the larger boats the cross-planking is nailed to the sides of the sternpost; in small ones the uppermost of the three planks that are normally sufficient, is halved into the outer face of the sternpost, with the two lower nailed against its sides. This transom, which occupies rather more than half the height of the stern, terminates at the point where the bilge strakes butt against the sternpost (Fig. 1).

"Spoon-shaped" well describes the form of the hull, which, for a length overall of 33 ft. 6 in., has a maximum beam of 16 ft. and a depth of 4 ft. The particular boat under description, one of medium size, cost 45 pounds Egyptian; it was built by two carpenters with two boy helpers in $2\frac{1}{2}$ months. The carrying capacity is 110 sacks of dhurra; as a sack hold 100 kg. of grain, this is equivalent to a cargo weighing about 11 tons.

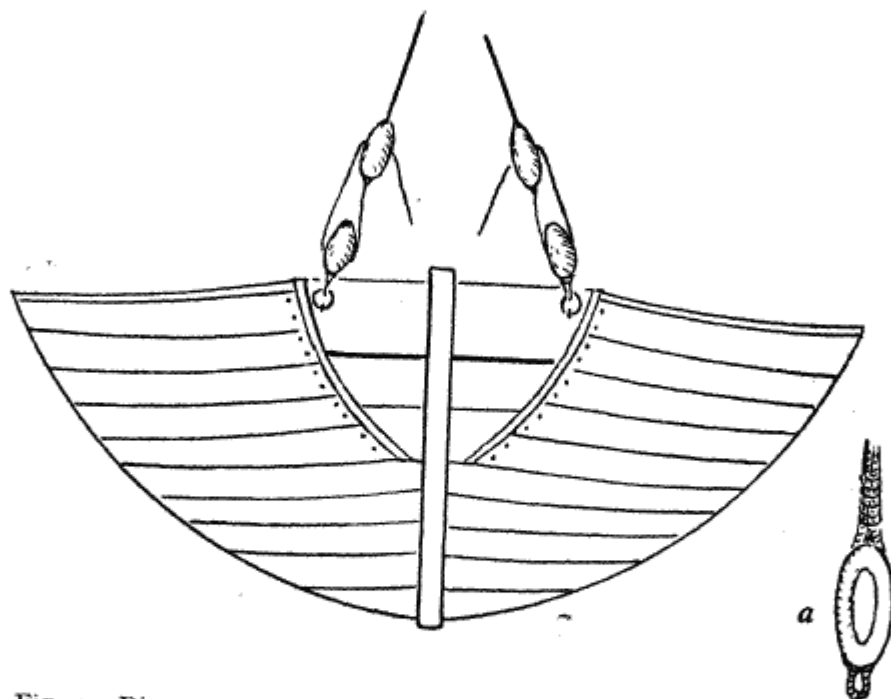


Fig. 1. Diagrammatic stern view of the hull of a Dongola markab.
a, a dumb-block with one sheave hole.

The boats in the date fleet which thread their way through the rocks of the Third Cataract on their way to Wadi Halfa when the Nile is in flood, are much larger; they are maintained mainly for this specific voyage; they carry up to 250 sacks of dates, each sack weighing 140 kg., a total of about 34 tons. Alas! this picturesque date fleet will soon be an incident of the past, driven out by the advent of motor lorries plying regularly between Dongola and Wadi Halfa the whole year round; transport is no longer dependent upon the rains in Abyssinia and the outflow from the Equatorial Lakes.

The life of a Dongola markab is given as eight or nine years, disasters excepted.

The shape of the fore-end varies. In typical boats it is full and rounded in true spoon-form (Pl. Ia) ; in others, the smaller, it is inclined to a sharper extremity. The stemhead is flat or slightly concave fore-and-aft, projecting not more than $1-1\frac{1}{2}$ in., usually rather less.

The sides are held together and transverse stresses countered by the use of stout thwart beams. All the main ones pass through rectangular recesses cut in the upper edge of the top strake, their ends visible on the outside. The number varies with the size of the boat.

In one measured, four of these stout beams support a foredeck, with two short minor ones (the ends not passing through the side planking) right in the bows under the forward end of this deck. Similarly, an after-deck is supported by four main beams and one short minor one. In addition, there is a midships master beam of great strength to which the mast is lashed on the after-side between two massive cleats, the mast-partners (Frontispiece).

The planks of both decks run fore-and-aft. Originally they are nailed down upon the cross-beams, but in the course of time they work loose and this defect is seldom repaired.

The waist of the boat is open ; it extends 4 ft. 4 in. forward of the mast beam and 3 ft. 10 in. abaft it, in the boat measured. In cargo markabs a very stout bollard with a squared head is fitted in the midline on the fore-side of the foremost of the major cross-beams and about $2\frac{1}{2}$ —3 ft., abaft the stemhead. On each bow, between the first and second main beams, a slender bollard, a cable-bitt, may be nailed to the bow planking on the inner side. At the after-end a similar bollard is sometimes fitted on the quarters.

The rudder and tiller are as in the Khartoum nuggars, except that the axis of the tiller is nearly horizontal. At the place where the slotted butt-end of the tiller joins the curved median section at a sharp angle, one or frequently two small amulets are commonly tied (Fig. 8 B). In these are writings made by a holy man (*fiki*), enclosed in tiny round cotton bags. The free end of the tiller is whittled down to provide an easy grip ; this and a little of the adjoining thicker part are often

covered with a wrapping of goat skin, hair side outer, to afford a secure hold. Quite commonly one, two or three small flags fly from short sticks stuck into one side of the rudder slot of the tiller when this is in position and functioning.

Mast and standing rigging. The mast is single, stepped vertically abaft the main crossbeam, to which it is lashed between two massive cleats. Its foot is shaped into a short square projection, tenon-wise, fitting into a square shoe cavity in a short fore-and-aft stout block nailed upon the keel. The mast is usually squared in the lower section, then rounded, and sometimes squared again in the middle and upper thirds. Foreign timber is preferred when procurable; discarded telegraph poles are in great request; bought cheaply for 5-10 piastres each, they are then cut down to the requisite dimensions. Lacking these, the masts have to be made up of short lengths spliced together very roughly; these are secured by through nailing and by binding round with raw hide—sometimes crocodile skin is used,

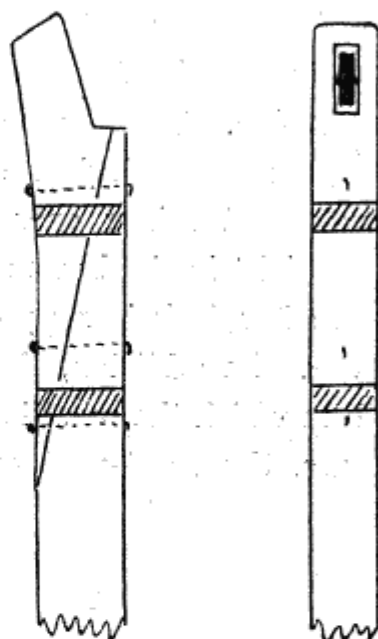
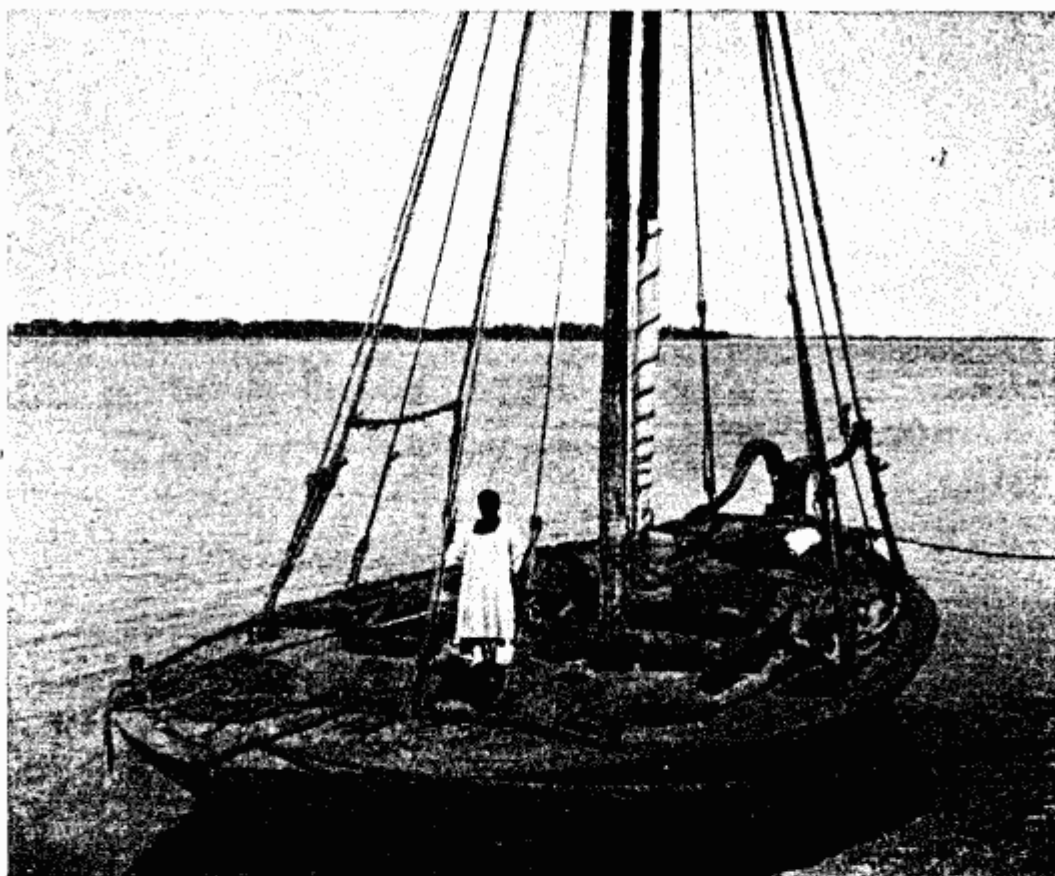
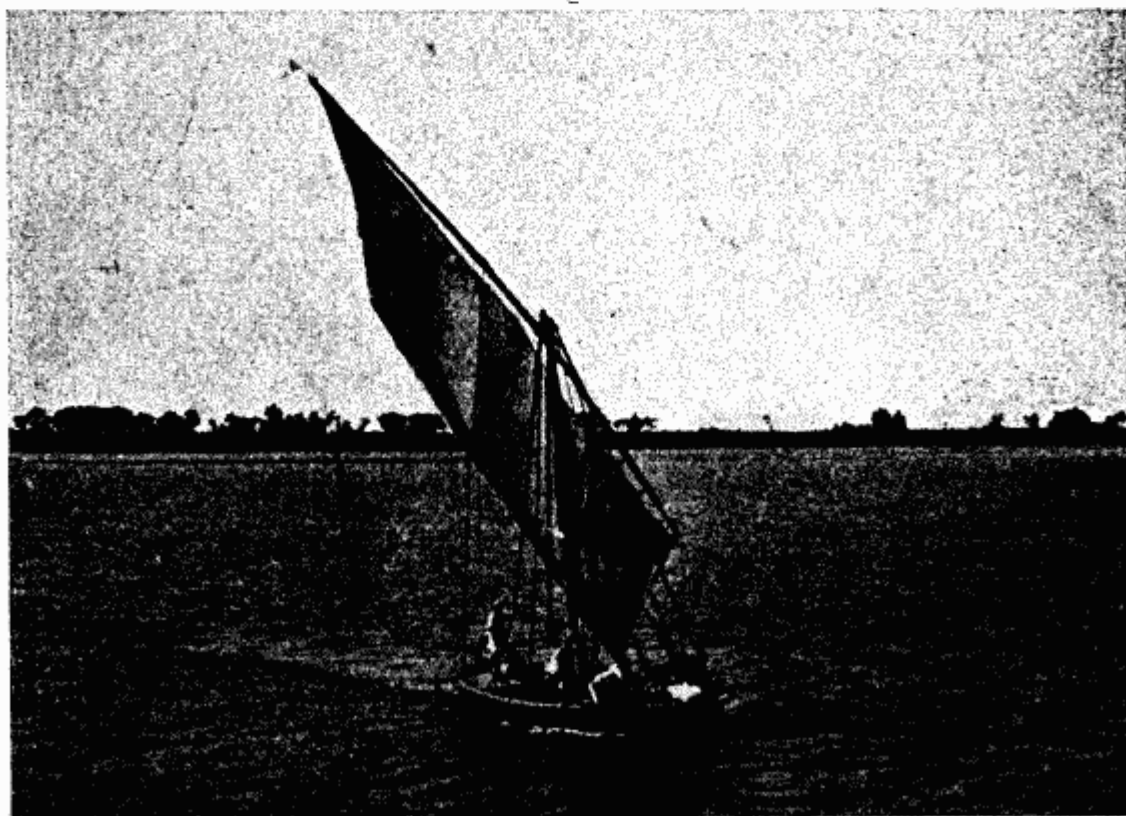


Fig. 2. Masthead of a Dongola markab in profile and face view. The two shaded bands indicate the positions of the two hide straps reinforcing the clenched nails securing the spliced-on halyard affix.

but I cannot say whether this has any magical significance as has the display of a rudely worked figure of this reptile upon the sail. The hide is put on wet, the ends sewn together with thongs passed through slits along the opposite edges. At the upper end of the mast a special short piece or affix is nailed on; the top part is cut back on the mast side and this angle provides good purchase for the collar from which the shroud blocks are hung (Fig. 2) and for the lashing on of the upper yards when hoisted into position. This yard is kept standing except when the boat is out of commission or under repair. The thinned

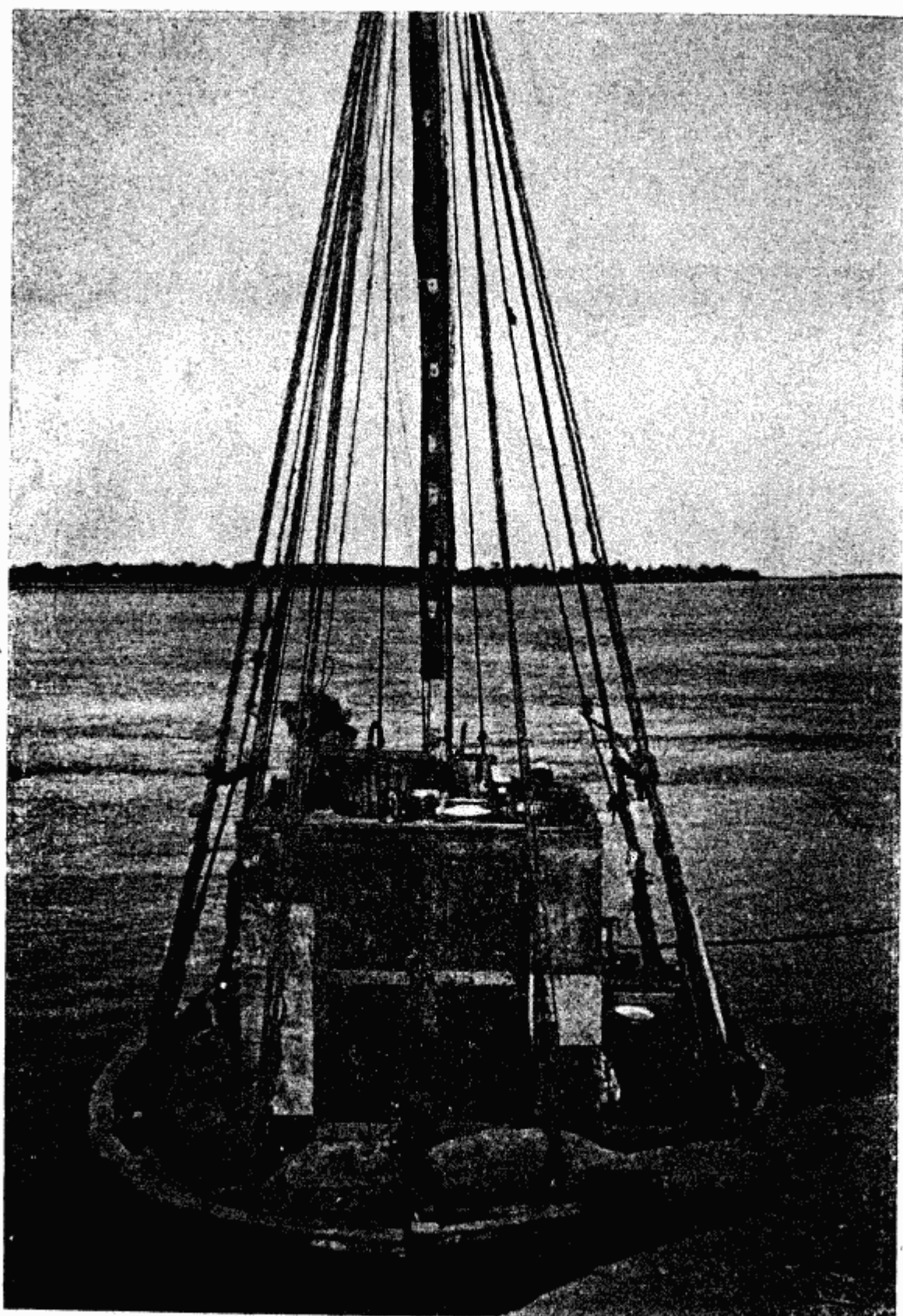


(a) Dongola markab at Kareima, 1939.



(b) Dongola markab under sail, 1939. (Photos by J. Hornell).

PLATE II



"Kantin" boat, Dongola reach, 1939. (Photo. by J. Hornell).

down terminal part of the mast affix is slotted to take the halyard, and in the better built boats a sheave may be fitted within the slot.

The length of the mast is 44 ft. in medium-sized boats. On the foreside a number of short step cleats are nailed at intervals, used whenever one of the crew has to climb the mast to adjust the head fittings.

Stays and shrouds. Only forestays are present. The number varies; two are usual but some boats have three and others four. Each of the two regular ones consists essentially of a gun-tackle purchase of two single blocks, usually without sheaves. The upper block is hung by a tail loop from a loop pendent from the masthead collar, the two connected by a wooden toggle, while the lower block is made fast by a lashing to the first major cross-beam of the fore-deck. In the largest boats a luff-tackle purchase is employed, the upper block being double (Frontispiece). Conversely, in small boats the lower block may be absent, with one end of the stay made fast to the deck beam and the other passing directly to a single block at the masthead and thence back to the deck.

Shrouds. These are normally in sets of three on each side. Each set consists of a stout doubled rope made fast below, a little forward of the mast, a similar double rope abaft the mast, and a single one, usually of thinner rope, abreast of the mast, midway between the other two. The upper ends are looped over the masthead, while the looped lower end of each of these five ropes is connected by a lashing to a stout grommet encircling one of the cross-beams or, alternatively, to a grommet passed through a ring-bolt driven into the inner side of one of the upper strakes. In the former fitting the fore-shrouds are made fast to the last of the fore-deck beams, the middle or single shroud to the mast beam and the after shrouds to the first of the after-deck beams. They are made taut by means of the lashing connecting the looped lower ends with the cross-beam grommets (Frontispiece). Another way of tightening the shrouds is by means of a ratline lashing bridging the interval between the fore and the after pairs of shrouds; this is effected by pulling these shrouds inwards toward one another (Pl. Ia and Fig. 3).

The sail. The long and narrow parallel-sided sail, tied at intervals along the head to an upper yard and along the foot to a lower yard, is so cut that it takes on an elongated rhomboidal form when hoisted to the masthead with the heel of the lower yard held down close to the mast. Very commonly it is a mass of patches. Originally it is made up of transverse widths of narrow, locally made cotton cloth. In one examined there were 33 breadths, each about 14 in. in width. The edges are turned in over a medium thickness rope called *museran*, with a thick bolt rope, *sagāla*, tied on outside along all the borders. The sail is not laced to the yards; the lashings are separate, each made by passing a loop round the bolt rope. It is frequently set abaft the mast with the fore-end forward of the windward shrouds and abaft the leeward ones.

Very commonly the rude silhouette of a crocodile, made by cutting out from black cloth, is sewed upon each side of the sail, fairly high up. Alternatively, the crocodile outline is traced with black paint (Pl. Ib). This crocodile *motif* is frequently seen in this district, as, for example, modelled on the sides of the great earthenware storage pots used to safeguard grain from vermin.

The two yards, upper and lower, consist of several short sections, usually five in number, in 8 or 9 ft. lengths, put together by means of splices strengthened by fishings. They have an extraordinarily clumsy appearance; they exhibit no attempt to be other than a rough assemblage of short pieces put together anyhow, the owner content so long as they make up the requisite length. Splicings and fishings seem inextricably commingled, the whole nailed, wired and hide-lashed in amateurish manner. No skilled craftsmanship is apparent, though it must be present or this patchwork of odd pieces of wood would not subserve its purpose as assuredly it does.

The upper yard is the longer—58 ft. in length, with a circumference of 22 in. at the lower end. The lower yard is 49 ft. 3 in. long and is 18 in. in circumference at the lower end. The slender terminal end of the upper yard is capped by a covering of black goat skin, hair outside; sometimes a small amulet, consisting of a tiny bag containing a text from the Koran or some religious formula written by a *fiki*,

is tied to the goatskin top. Or this may be varied or even added to by tying on the wings or the head and wings of a bird, usually of a kite or hawk, or, occasionally, the jawbone of a sheep. These are

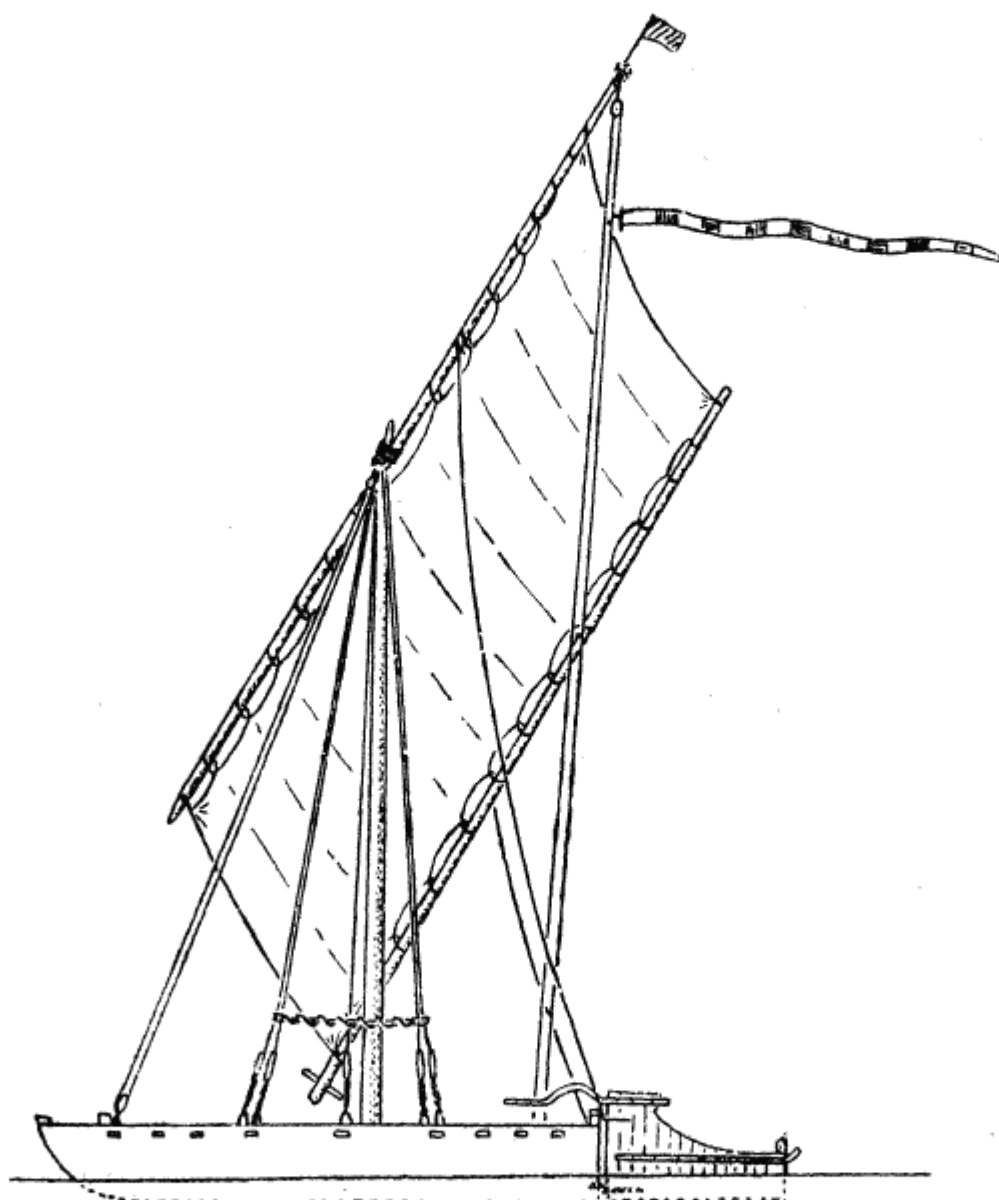


Fig. 3. A Dongola markab showing the arrangement of the rigging, sail, etc.
The starboard rigging is omitted.

termed *ashân el ain battalla*, meaning an amulet to avert the effects of the evil eye. In addition to these trimmings, a little flag tied to the

end of a stick lashed against the upper end of the yard is displayed to afford the steersman indication of the direction of the wind.

Besides the wind-vane flag, better-class boats fly a pendant, very long, narrow and particoloured, from thin flag halyards rove through a small block hung from the yardarm (Fig. 3). As in European ships, it is flown only on special occasions; at other times it remains in a bundled up packet, ready to be broken out. The colours vary; in a typical instance they consisted of repetitions of short sections of the series red, white, black, white. The proximal end of this pendant is sewn to a short cross-piece of wood, suspended from the halyard by a short cord.

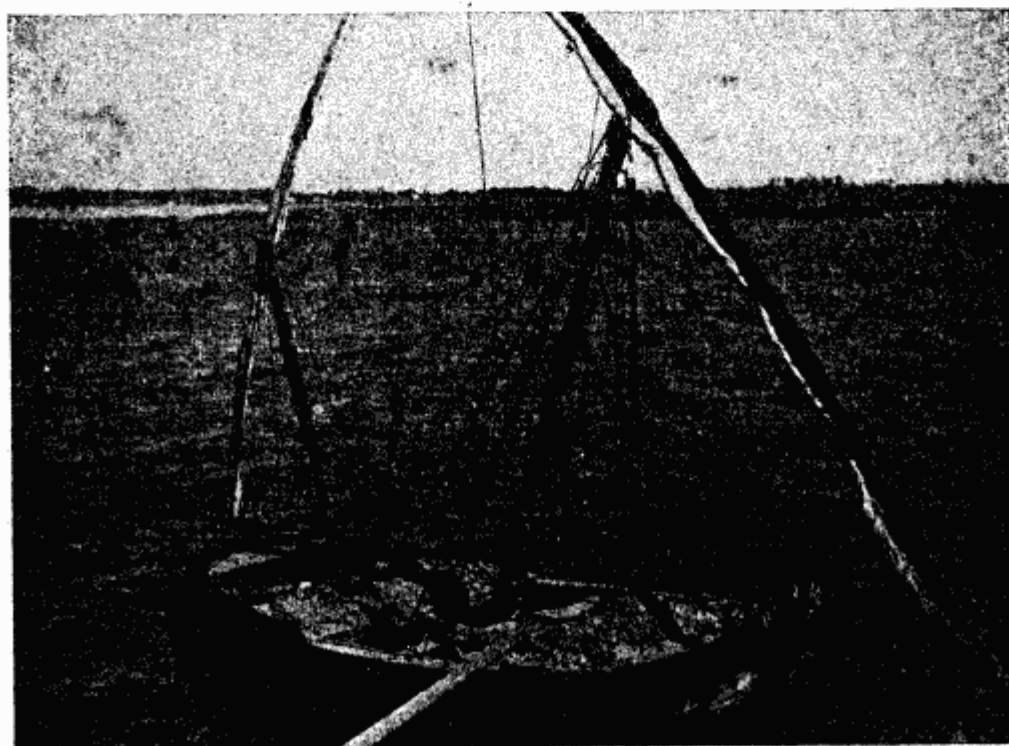
The lower end or heel of this yard is usually trimmed down to hold securely a rope loop fitted at the clew of the sail.

The lower yard is made up, like the upper, of four or five sections spliced and fished together. About 9 in. from the heel, a cross-bar, about 2 ft. 9 in. long, is passed through a hole bored through the yard or may be lashed across it; this serves as a turning handle when furling the sail, for this is done in this peculiar rig by rolling the sail around the lower yard. If sail has to be taken in, the equivalent of reefing is here effected by reducing the sail area by giving two or three turns to the yard handle. This method of furling is admirably adapted to local conditions; by no other method can sail be reduced so quickly. This is of particular value to boats of the date fleet when navigating the rock-strewn passage of the Third Cataract on their annual voyage at high flood from Dongola to Wadi Halfa with their decks piled high with sacks of dates. Their rig is peculiarly suitable to ensure success in this adventure owing to the ease and celerity with which the sail may be spread or furled, wholly or in any degree, by the simple expedient of unrolling or rolling it on the lower yard.

When descending the cataract with the wind blowing upstream, the boat proceeds stern first. Sufficient sail is let out to keep her head to the current and her pace moderate enough to give the steersman command over her course; the powerful rudder enables him to swing her head quickly round when a dangerous rock looms up in the fairway. Further control is afforded by the employment of two pairs



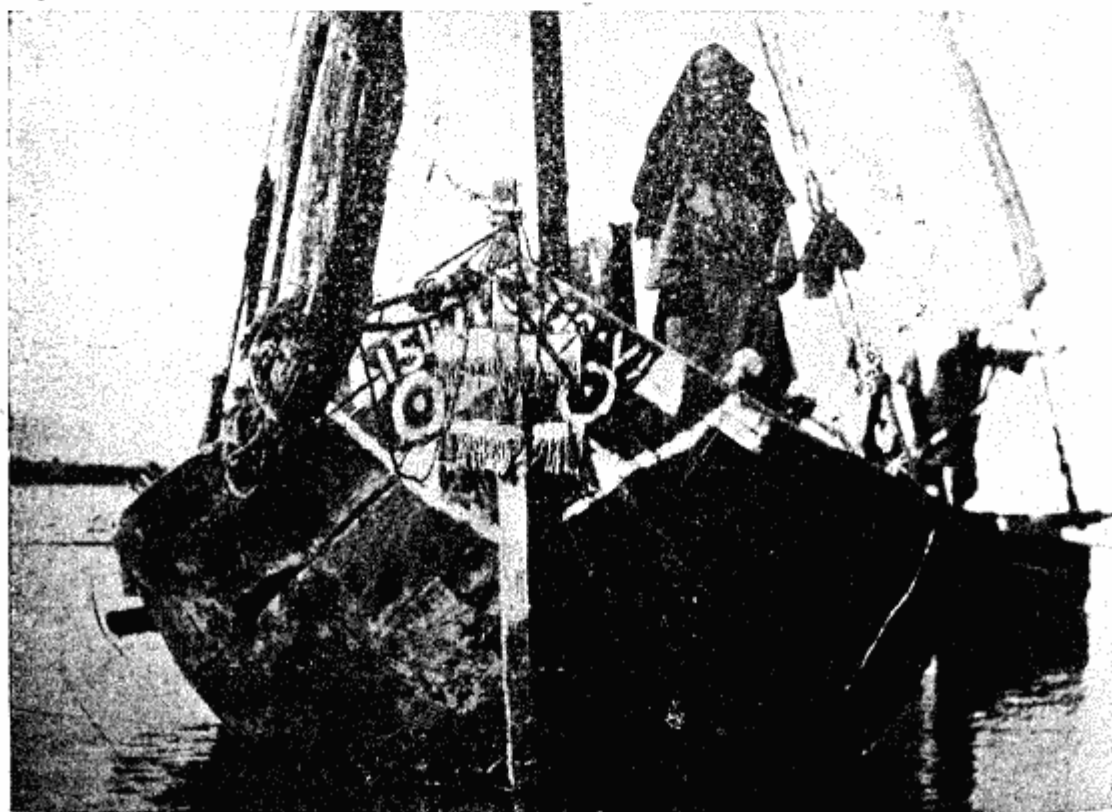
(a) Nuggar of Wadi Halfa-Shellal type, 1937.



(b) Large nuggar of Aswan-Esna type, 1937. (Photos by J. Hornell).



(a) Bows of Aswan-Esna nuggar, 1937.



(b) The same boat. The fringed cloth protects against the evil-eye. (Photos by J. Hornell).

of sweeps pivoted upon an outrigger frame. This apparatus is similar to that in frequent use on both the Blue and White Nile, south of Khartoum; on the Dongola reach it appears to be fitted only in such exceptional circumstances as the one instanced.

The sail is controlled by two vang, one on each side. Both are attached to the upper yard at the same point, roughly at about one-third of the distance between the masthead and the end of the yard. The lower end of each connects with a guntackle purchase of two single dumb blocks; the tail of the lower block is made fast to a ring

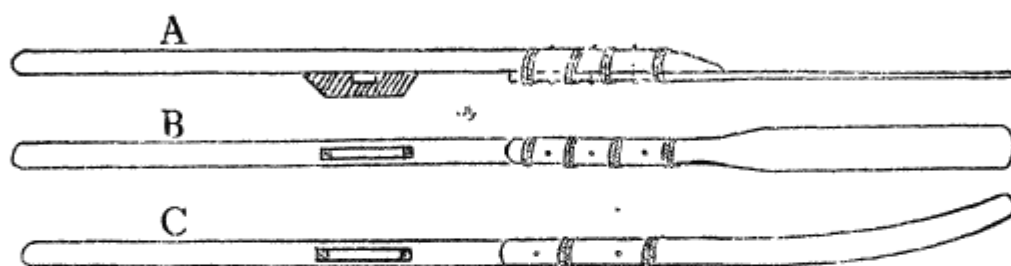


Fig. 4. Oars of Dongola markabs. A and B, the straight form in top and side view; C, side view of the curved-blade form.

bolt on the outside of one or other of the corners of the stern transom (Fig. 1).

Sweeps. When the wind is adverse or awanting, sweeps are used. Two are carried. The blades may be either straight or curved vertically. Both kinds are in two sections owing to their great comparative length, divided fairly equally between loom and blade. The two parts overlap in a splice and are secured both by nailing and by several sets of turns of cord (Fig. 4). To one side of the loom at gunwale length, say at 5 ft., a heavy block of wood, perforated at mid-length, is nailed in a position at right angles to the blade. When in use, a grommet, passing through the hole in the side block, is slipped over a thole pin in the gunwale. In one instance, off Argo Island, a chain took the place of a rope grommet.

Dimensions: length overall, 16 ft.; blade, inclusive of overlap, 8 ft.; splice overlap, 18 in.; loom, 8 ft.; thole pin block, 16½ in. long, 4 in. thick.

In the reach between Kareima and Debba where the river runs to the south-west instead of to the north, resort is had to rowing, paddling, tracking and poling when going upstream, for here the prevailing north wind is no longer favourable. In the smaller boats a man may often be seen stretched over the prow, using an oar paddlewise, digging it into the water on each side alternately with a drawing stroke. In larger boats two men row, one sitting to starboard on the mast beam, the other on the port side on the last of the fore-deck beams. These oars are in two parts, a pole loom about 5 ft. long, tied to a broad, shovel-shaped blade wrought to a short handle at the inner end. This blade is shaped from a board taken from some packing case and varies in form, for while some blades are sub-triangular, the majority have parallel sides.

The blade is lashed to the pole through two or four holes and by turns around the "handle" (Fig. 5).

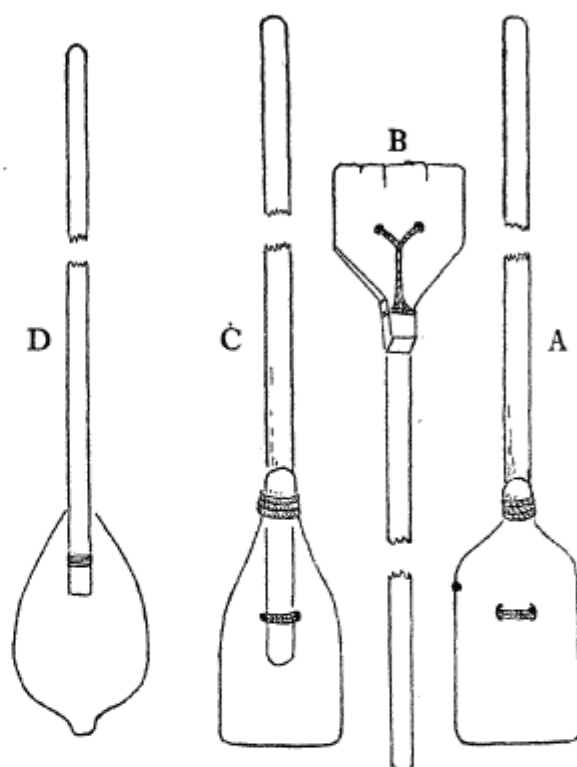


Fig. 5. Markab paddles. A, B and C, variations of the current form; D, an Ancient Egyptian paddle of a boat model from Meir (after Reisner).

Decoration. Apart from the amuletic figure of a crocodile on the sail, the only decoration employed is the occasional carving of the bollard heads and of the uppermost transom board and the painting of geometrical patterns on the quarters, rudder and tiller, suggestive of Arab influence, for the Red Sea sambuks are decorated in just the same places.

The most commonly carved object is the squared head of the main bollard between the bows. On each side a 6, 8 or 10-rayed

rosette-star is deeply incised within a circle (Fig. 6). Less frequently the same device or one of related pattern, several times repeated, is carved on the top strake of the stern transom. Here each rosette may be enclosed in a rectangular dog-tooth carved frame or a row of them may be separated by a vertical band of the same dog-toothing (Fig. 6).

Occasionally the bare wood of the hull is relieved by brightly coloured triangles painted on the top strake on each quarter and on the upper part of the rudder. Coloured bands are sometimes painted around the tiller.

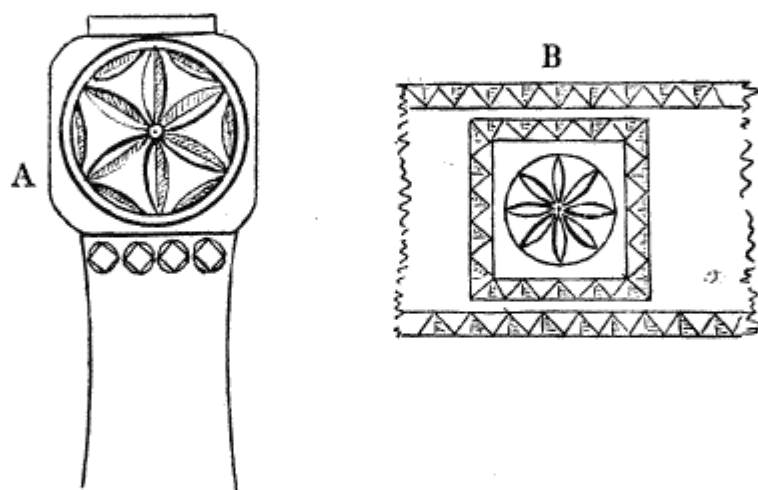


Fig. 6. Carved decoration on Dongola markabs : A, on a bollard head ; B, on the uppermost strake of a stern transom.

A noteworthy and characteristic feature of the Dongola reaches is the employment of small travelling boat-shops, known by the name of *kantin* (canteen). Each is a medium-sized markab whereon a packing-case structure of unpainted deal planks (from dismantled trade cases) fitted on a decking forward of the mast, contains the stock-in-trade of the itinerant storekeeper (Pl. II). Inside, it is fitted neatly with shelves on which lie rolls of Japanese cotton goods and a miscellaneous selection of articles favoured of the villagers. The shop structure is from 8 to 9 ft. in height, with a double door at the fore-end. These *kantin* boats are fairly numerous.

Ferryboats are built and rigged in the same way as the cargo craft but are smaller in dimensions and short of some fittings. They and the kantin boats lack both a median bollard and cable-bitts.

Origin and relationship. In the major constructional details of its hull the Dongola markab is identical with the nuggars found above the Fourth Cataract. These features, as has already been shown (Part I, p. 1), have such essential similarity to those incorporated in the boat-building technique of Ancient Egypt that we may regard these modern craft as direct descendants of the river boats of the Middle Empire, a conclusion as definite as it is reasonable; in this connexion it is useful to recall that Nubia retained many features of old Egyptian culture for centuries after Arab domination had eliminated these in Egypt herself.

The sail rig of the markab is in a different category. It differs fundamentally from every type of sail represented in Ancient Egyptian sculpture and painting. None of the old sail types is ever seen set diagonally on the mast, nor is any of the old forms ever shown as furled by rolling upon a lower yard. Either the upper yard was let down until it came to rest upon a lower yard as in the representations of Queen Hatsepsut's Punt fleet, or, when no lower yard was present, sail was taken in with the help of bunt- and clew-line, after the fashion depicted in the spirited naval battle scenes upon the outer wall of the temple built by Rameses III at Medinet Habu.

No parallel to the strange Nubian type of sail occurs except in Indonesia. There it is the typical indigenous form of sail, common from Java to New Guinea. In this extensive region it has been in use from time immemorial, for the Javanese ships seen on the sculptured panels of the Buddhist shrine of Boro Budur, erected in the eighth or ninth century A.D., are all rigged after this manner.

If this sail, furled by rolling around the lower yard, was unknown to the Ancient Egyptians and to their successors the square-sail Romans and the lateen-using Arabs, the inference must be either that it was invented independently in Nubia or that it was borrowed by the Nubians from the Far East. The latter hypothesis is not so

improbable as it may appear to be if the problem be hastily considered, for we know that Indonesian influence was important on the East African coast in those early days when Brahmanism and Buddhism flourished in Java—a period which lasted approximately for the first twelve centuries of our era.¹ Positive evidence of this is afforded by the occurrence on the African coast, from Mozambique to Lamu, of double-outrigger canoes of a most distinctive design, known elsewhere only in Java. Other instances pointing in the same direction are on record. These facts, taken in conjunction with the colonization of Madagascar by immigrants from Sumatra and Java, prove how extensive must have been Indonesian overseas commerce with Africa during the first millennium A.D. When or how the trading connexion was severed is unknown; possibly, indeed probably, this was brought about by the spread of Islam throughout Indonesia in the thirteenth and fourteenth centuries, for after this time traffic became diverted from the east coast of Africa to the Red Sea, where shiploads of Muhammadan pilgrims from Indonesia arrive annually on their way to worship at Mecca.

In considering the present problem it is important to remember that several of the racial strains that entered into the composition of the early population of the Nile Valley in the region which is now Egypt, were derived from migrants landing from boats on the western shore of the Red Sea;² what is true of prehistoric times may well be true of the early centuries of the present era. Coming to a still later period we recognize how maritime influence from Persia and Arabia exerted such immense influence upon Egyptian shipbuilding practice as to revolutionize it in its entirety.

No definite conclusion regarding the origin of the Nubian sail is as yet permissible; all that may be attempted is to draw attention to the possibilities. Further research is needed before we can say whether these are to be considered as probabilities.

¹ Hornell, J., "Indonesian Influence on East African Culture," *J. Roy. Anthropol. Inst.* LXIV, pp. 305-332, 1934.

² Winkler, H. A., *Rock Drawings of Southern Upper Egypt*, The Egypt Exploration Society, London, 1938.

Vernacular technical terms

The boat herself	<i>markab</i>	Shroud	<i>ṭarf</i>
Travelling shop-boat	<i>kantin</i>	Windward vang	<i>mersīn</i> (? <i>massīn</i>)
Prow	<i>migdim</i>	Leeward vang	<i>raja</i> (? <i>rafa</i>)
Stern	<i>darraga</i>	Forestay	<i>āiyar</i>
Stern-post	<i>wastānī</i> (<i>wastaniya</i>)	Thin rope within the turned-in edge of the sail	<i>museran</i>
Keel	<i>madda</i>	Bolt-rope	<i>sagāla</i>
Rudder	<i>daffa</i>	Tightening rope between the two outer shrouds	<i>māshallah</i>
Tiller	<i>yadd ed-daffa</i>	Mast cross-beam	<i>jagūs</i>
Oar	<i>makdaf</i>	Median bollard	<i>jagūs wastani</i>
Punting pole	<i>midra</i>	Beams under fore-deck	<i>jagūs gaddame</i>
Mast	<i>ṣāri</i>	Beams under after-deck	<i>jagūs wara</i>
Sail (literally "cloth")	<i>gumash</i>	Carved indicator at outer end of rudder	<i>rizza</i>
Halyard	<i>ḥāyah</i>	Rais' box in which he keeps his belongings	<i>ṭarma</i>
Upper yard	<i>gharya fōg</i>	Unit of measure, a span	<i>shibr</i>
Lower yard	<i>gharya takht</i>		
Goat-skin cap to upper yard	<i>tartur el ghatta</i>		
Cross-bar to rotate the lower yard	<i>malwinah</i> (? <i>muvine</i>)		

GROUP B.

River craft of the Nuggar type, characterized by the insertion of a few transverse frames and the adoption of the Egyptian upcurved prow and raked mast or masts. Lateen rigged.

Local type 1: The Wadi Halfa-Shellal design.

Nuggars of this type are built and used on the long stretch of river between the Third and Second Cataracts—from Wadi Halfa to Shellal, a distance of about 210 miles. Apart from the differences to be detailed later, these craft have generally a greater moulded depth and the bilge has a slight hardness not found in either of the types plying south of the Third Cataract.

Craft of this description are all of moderate size. One which I measured at Wadi Halfa in 1937, regarded as a large one for this locality, is representative of its kind. The shell was 9.2 m. over all; the beam amidships, 4 m. and the depth 1.28 m. The cargo capacity was rated at 70 ardebs or approximately 10 tons of grain (Pl. IIIa).

The constructional methods follow closely those of Dongola. Sunt wood is used for all parts except the mast. The strake planking is in rather shorter lengths than is usual in Khartoum nuggars and is irregular in width as well as in length ; sometimes a short piece of double ordinary width is intercalated in the run of the strakes ; this and the irregular lengths of the planks, combined with the rough adzing of the unpainted surfaces, give the impression of rude and clumsy craftsmanship. The strakes are nailed together as usual by iron spikes driven in obliquely. Many ends are butted together directly, with a caulking of rags between, but all important ones are halved together and secured by through nailing from the inner side, the projecting ends clenched down on the outer surface. The planking runs 10—11½ in. in width and from 1¾ to 2 in. in thickness. On each side of the keel at mid-length are nine strakes. Nine cross-beams (thwarts) hold the sides together ; four support the fore-deck, four the after one and one, the main beam (*jagûs*), a specially stout timber, 5½ in. thick, serves to support the mast, which is lashed to it on the after-side. Their ends pass through the middle of the top strake and are not merely recessed into its upper edge as in the southern designs, a difference due to the presence of deck planking in the northern craft.

One of the two most notable departures from the true nuggar design is the employment of inserted transverse frames (*hedera*). Of these there are usually five, one placed across the bottom and sides under the fore-deck, three in the waist and one under the after-deck. Each measures 2¼ in. wide with an average depth of 4 in. Each consists of a floor timber, overlapped at each end by an upcurved rib. In all three members holes are cut at intervals, fore-and-aft, in the lower edge to permit bilge water to drain through. These frames are fitted after the shell planking is in place ; they are spiked from the inside to the strakes, the ends of the spikes clenched on the outside.

The stern has the square transom form seen in Nubian nuggars, differing only in having the sternpost on the outside of the transom planking. The fore-end, however, differs from all Nile vessels plying south of Wadi Halfa ; instead of the gunwale running to the stem without notable sheer, the fore-end in these northern craft curves

upwards in a strong and graceful sweep that begins just forward of the mast and rises fully 2 ft. above the midships height. The curve is gradual, without the abrupt, angular bend seen in the Egyptian *gyassa*; similarly, the curve from the forefoot is well rounded and pleasant. The stemhead rises free nearly a foot; on the gunwale on each side a pair of bitts is fitted. The gunwale is finished off with a flat covering board, 3 to $3\frac{1}{2}$ in. wide, and 2 in. thick.

Deck plan. At either end fore-and-aft planking is laid over the beams to form true deckings, sunk 3 or 4 in. below the gunwale. The fore-deck slopes upwards towards the stem, with a square hatch on the port side. The after-deck is horizontal, with a hatch a little way forward of the sternpost.

Rudder. As seen in Pl. IIIa, the rudder head is exceptionally long, sloping downwards and outwards. Unlike the Nubian nuggars, the upper section is short vertically so that only the highest point of the head clears the top of the sternpost. The tiller is straight and is set obliquely on the rudder head; this brings the grip considerably higher than the butt.

A grapnel of four flukes is slung between the stemhead and the port bitts.

Mast and sail. The single mast rakes forward; it is rigged with a tall, high-peaked lateen exactly as in the *gyassa* of Lower Egypt. Step-cleats are nailed on the after-side. It is stepped by means of a rectangular tenon fitting into a mortise in a heavy wooden bar nailed fore-and-aft upon the three median floor timbers (Fig. 8 A).

Three shrouds are present on each side and two backstays are led to the foremost of the after-beams. A light bowsprit steeves up at a sharp angle from the fore-deck, with a whip tackle at the outer end running to the heel of the yard which is further controlled by a strong tack-rope. There is one vang, made fast to the yard fairly high up. Other fittings are as usual in a *gyassa*.

Oars or sweeps. Two are used, pivoting on wooden thole pins, one on each side of the fore-deck. The loom is roughly squared, the blade narrow, spliced to the loom and secured with iron bands. On the after-side of the loom a wooden block is nailed, recessed on the

inner side to form a squarish hole through which a thole pin passes as in some Irish curraghs.

Conclusion. It is clear that here we have a boat design where two distinct cultural influences have met and blended. The basic constructional features of Ancient Egypt and modern Nubia continue to prevail in respect of the way the hull planking is put together without the initial setting up of frames upon the stocks; but even here innovation is evident, for the employment of inserted frames is an attempt to secure the advantages of a framed hull without serious departure from traditional custom. In all else, in the cock-up of the prow, the deck arrangement and the lateen rig, modern Egyptian and Arab influences have completely ousted the old cultural traits.

Local type 2 : the Aswan-Esna design.

Under this heading I include the roughly built nuggar craft that ply on the reaches between Aswan and Esna and occasionally voyage northward to Luxor.

The hulls are built of thick sunt wood, put together in the Nubian fashion. Egyptian influence is seen in the bluff, full bows, the sharply upturned stem, almost vertical in the upper part, and in the lateen rig, usually two-masted (Pl. III*b*). Strangely enough, although exposed intimately to the influence of the gyassa build and rig, the design retains one ancient characteristic wanting equally in the Nubian and the Egyptian design—the boat is double-ended, with the stern sharp and slightly raked. And while the gyassa type of light bowsprit is found in the Wadi Halfa-Shellal design, it is lacking in this Aswan-Esna type.

The hull, after being planked up, has a number of transverse frames inserted. In one examined at Luxor, there were four in the open waist, four under the fore-deck and three under the after-deck; in another the numbers were respectively, 4, 3 and 2.

In a boat 34 ft. over all, with a beam of 15 ft. amidships and a depth from the keel to the top of the main beam of 5 ft. 1 in., the deck plan is as follows :

The fore-deck is level, not sloped upward to the stem as in the Wadi Halfa and gyassa types. Its length from the stem to the after edge is 12 ft. On the port side is a square hatch. A median bollard may or may not be present. When it is, it is fitted immediately abaft the stemhead. A pair of weak bitts is nailed against each bow (Pl. IV *a*).

The open waist, 8 ft. long, is divided into two parts by the stout main or mast beam, about 1 ft. wide. Along each side a plank connects the two decks, affording means of passing to and fro between them and a necessary fitting when the crew have to pole the craft in shallow water (Fig. 7).

The sides of the after-deck are raised about a foot by means of a bulwark plank or weather board set on edge, supported by a stout

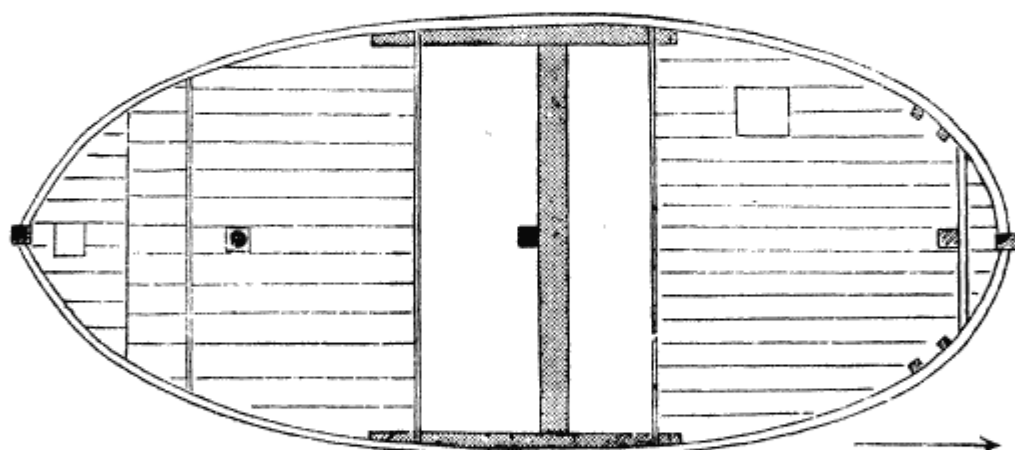


Fig. 7. Deck plan of an Aswan-Esna nuggar.

knee on each side of the deck. In some boats, 8 ft. abaft the fore-edge of this deck, is a low bulkhead, also a foot high, held together by a narrow bar or cap. Two feet farther aft and about 18 in. forward of the sternpost, another bulkhead of the same height is placed. The narrow space abaft this is closed in on the sides by the weather boards curving in to meet the sternpost; it is boarded over and forms a small locker for oddments, to which a small covered hatch on the upper side gives access. The interval of 2 ft. between the two bulkheads forms a narrow transverse space, a kind of cockpit. But in many boats this is not present, the deck running clear to the fore-side of the small stern locker.

Rudder. The rudder head is cut low as in the Wadi Halfa boats and is mean in comparison with the lofty decorated head of Nubian boats (Fig. 8). The tiller is compound; its butt is held between the fore-ends of two bars which embrace the rudder head, and have a filling at the outer end (Fig. 8 x); iron bands secure the ends of the side bars. The straight tiller reaches 7 ft. inboard. As these boats are employed chiefly in the transport of chaff and other deckload cargo, the tiller is set obliquely, raking upwards to the grip, thereby enabling

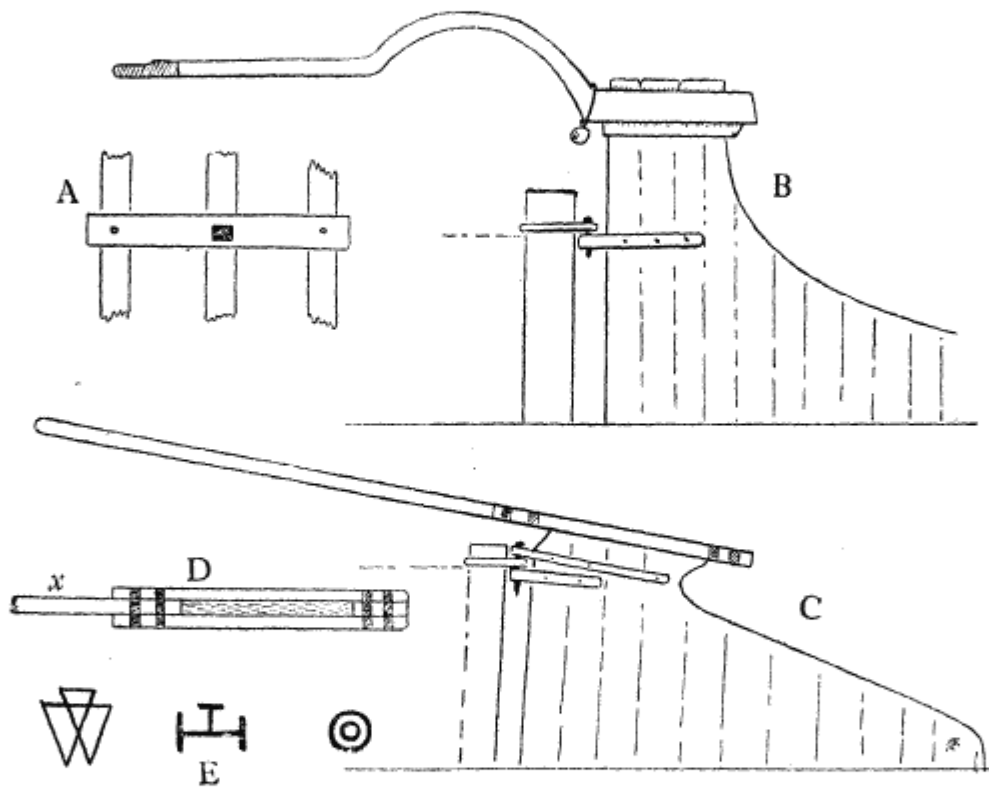


Fig. 8. A, mast shoe of a Wadi Halfa-Shellal nuggar, nailed athwart three floor timbers; B, rudder of a Dongola markab; C, rudder of an Aswan-Esna nuggar. D, top view of rudder head of (C), showing lateral cheeks bound on by iron bands, x butt end of the tiller arm; E, three registration symbols.

a man to steer the boat while seated high on the deck cargo. When ever such light cargo is carried, a weather screen of canes or rods is fitted along each gunwale.

Mast and sail. Mostly these boats are two-masted. When two, they rake in opposite directions, so the step-cleats have to be fixed on the after-side of the mainmast seeing that this one rakes sharply forwards (Pl. III b), whereas those on the mizen are on its fore-

side. The mainmast is stepped nearly amidships, leaning against and lashed to the main beam; the mizenmast passes through a square hole in the after-deck to be stepped like the mainmast in a shoe in a fore-and-aft block above two or three floor timbers.

In two-masted nuggars a bumkin is provided to extend the clew of the mizen. In single-masted boats this is not required.

Decoration. Very little is ever seen; the most usual is a semi-circular patch of white on the prow centred from the stemhead; sometimes two or three varicoloured bands are drawn radially from the same point. Otherwise the boat is left in its natural weathered grey tone, a homely looking, workaday craft. Some show an oculus-like symbol on each bow; this, however, is merely an indication of registration; other symbols of the same nature are shown in Fig. 8 E.

Amulets. In Nubian boats above the Third Cataract, amulets are generally tied to the tiller or at the upper yardarm. North of Aswan the usual position for them is the fore-side of the prow or hung from the stemhead. Great is their variety. The most popular include a length of fringed cloth (Pl. IV *b*), a festoon of stringed onions and a baby crocodile, dried, and encased in turns of cord, half-hitched at close intervals; the limbs are separately served. One boat had the wing of a kite hung below the stemhead, while another had three festoons of dried dates hung on each bow and joined across the face of the stempost.

Vernacular terms in use on the Aswan-Edfu reach.

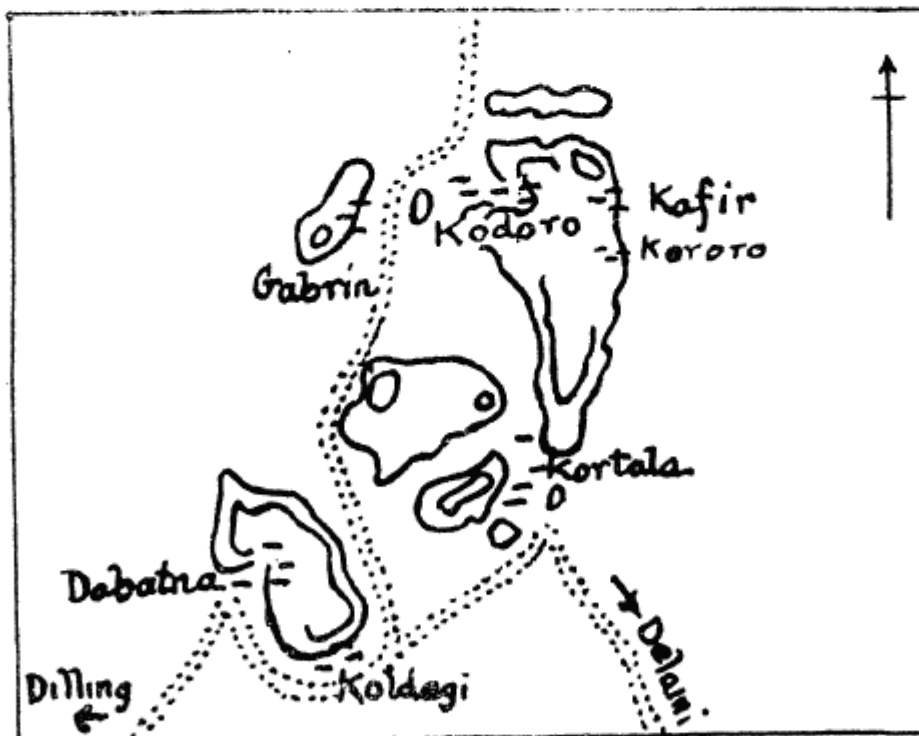
Upturned prow region	<i>ṣadr</i>	Rudder	<i>daffa</i>
Stemhead	<i>baddan</i>	Tiller	<i>'asaya</i>
Sternpost	<i>wastani</i>	Mast	<i>sa'ari</i>
Keel	<i>medda</i>	Mainmast	<i>sa'ari da'azile</i>
Transverse frame (rib)	<i>hedera</i>	Mizenmast	<i>mīzan</i>
After-deck	<i>badūnsa</i>	Step-cleat	<i>sellim</i> , pl. <i>salā-lim</i> .
Bitt or bollard	<i>sham'a</i>	Yard	<i>garya</i>
Bollard abaft stem	<i>sham'a fi'lwist</i>	Bumkin	<i>baṭafōra</i>
Main beam	<i>ḡagūs</i>	Backstay	<i>mahadda</i>
Weather boarding aft	<i>rhāyaysh</i>	Shroud	<i>faiya</i>
Transverse cockpit	<i>nagsa</i>	Sail	<i>gel'</i>
Stern locker	<i>dharma</i>	Oar	<i>mukdaf</i>
Sleeping place below poop	<i>kun</i>		

THE HILL TRIBES OF KADERO.

By Dr. S. F. Nadel.

I. THE PEOPLE.

This article is concerned with a small Nuba tribe (more explicitly a tribe belonging to the negroid races which inhabit the Nuba mountains in Kordofan), of perhaps 7,000 souls whose habitat is the Kadero hills. The name Kadero marks on the map a low mountain range on the northern edge of the Nuba mountains, east of Dilling and north-west of Delami. No vernacular name for the whole hill massif exists, nor do the people who inhabit it possess a collective name for themselves, embracing the whole group. They have a different name for each of the hills and ridges which form the hill massif and call the communities which inhabit them by the names of their localities. I visited three of the seven hill communities of Kadero. These three communities occupy the flanks and outer valleys of the mountain range in the south, west and north. They are : Kortala, Dabatna, and Kodoro (see Sketch-Map).¹



Sketch Map of the Kadero Hills
(1:250,000)

1. Kodoro is the original of the corrupted form Kadero. To avoid confusion, I will use the latter name for the hill massif and tribe as a whole, and the former for the hill community of that name.

The names Kortala and Dabatna are again not the names which the people themselves would use, but names by which the communities have become known to their neighbours, above all to the Arabs and, to-day, to the Government. The vernacular name for Kortala is Awakrel; the name Kortala is derived from the name of the most important clan of the community (Urkortala) which acquired special renown through the priests of its clan cult. The proper name of Dabatna is Karo; Dabatna, it seems, was the name of an Arab nazir (of the Beni Fadl) who settled in these hills and became the overlord of the Nuba community some time before the *Mahdia*.

The absence of a collective tribal name reflects the loose conception of tribal identity. The different communities, and even different sections in each community, claim independent origin, and regard their present unity as little better than an accident—the chance result of migration and settlement. Nor are the traditions of origin clearly formulated or remembered. One section of the Kortala traces its origin to the Jaalin 'on the river'; another to the old kingdom of Ghadayat in Kordofan; a third claims to have lived in its present habitat since the beginning of memory. Kodoro, too, has its 'aboriginal' section and its immigrants from the Ghadayat; a third group traces its origin to the ancient Fung kingdom south of Sennar.¹ In Dabatna we find

1. The people of the Kortala speak of 'Jaalin' and 'Fung' as though the two names meant the same thing, thus implying that the Jaalia formed part of the Fung dominions. S.F.N.

(The intimate part played by the Ghodiat in the ceremonies described below by Dr. Nadel can hardly be due merely to the short ascendancy of the tribe during the 18th century (See MacMichael MS D.I. CCIX). The insistence of this MS on the Hamag, as opposed to the Fung origin of the Ghodiat is significant since it was the Hamag Abu Likeilik who conquered Kordofan for the Fung and later usurped their power. It was under his regime that the Ghodiat achieved their ascendancy.

It is now accepted, I think, that the term Hamag came to be restricted in the Sudan to the survivors of the negroid inhabitants of the Gezira who were conquered by the Fung but returned to power under Abu Likeilik. There are therefore grounds for thinking that the Ghodiat may originally have been akin to the Soba kings, whom they survived. This would account for their ancient connections with the Nuba peoples to the south, connections which appear to be more intimate than were ever established by later Arab conquerors. If, as is possible, the Fung borrowed the horned cap and other insignia from the Hamag, they may well have existed in Kordofan before the Fung invasion. The Jaalin connection was an inevitable consequent, common to indeterminate would-be Arabian rulers.

It is incidentally of interest, in connection with the presumed northern origin of the hill Nubians, that Pallme describes the original inhabitants of the Jebel Kordofan area as negroes from Nubia, who 'even at the present time (early 19th Century) inhabit many parts of Kordofan'.—EDITOR.

again one section which claims the status of 'aborigines' and another of Ghadayat origin; in addition, there is the memory of the more recent immigration of the Beni Fadl, who disappeared, however, as a separate section, having been absorbed in the Nuba tribe over which they had established their shortlived rule.

The genealogies of the chiefs give some indication of the period of the Kadero migrations. The people of Kortala enumerate thirteen chiefs, of six to seven different generations; the first of this line of chiefs is said to have led his people from the Jaalin country to the Kadero hills. In Dabatna they remember six generations of chiefs belonging to the present chiefly clan and, preceding them, three chiefs of Ghadayat extraction; but the latter memory is vague and uncertain. In Kodoro I recorded seven generations of chiefs, all of Ghadayat origin. These figures suggest that the main immigrations took place towards the middle or end of the 18th century. But the data are too uncertain and the memory too blurred to pronounce on the historical nucleus which might be embodied in these traditions.

We must add, however, that the traditions of origin are to some extent reflected in the present social and political structure of the communities. For what are to-day different groups of classes are regarded in historical perspective as groups claiming different descent. The community is thus conceived of as having emerged from the coalescence of heterogeneous groups whose identity survives in the modern segmentation of the society. The claims of Ghadayat descent, moreover, appear linked with the loose political supremacy which that kingdom held over the Kadero hills; as we shall see, the chieftainship in Kadero depended on the confirmation by the Ghadayat rulers, and the chiefs of Kadero received their 'crown' at the hands of the sultan of the Ghadayat. Whether the tradition of descent implies more than merely a mythical elaboration of the semi-feudal relationship I will not decide.

The unity of the Kadero tribe has a firmer foundation in language and culture. The different communities speak an identical language and possess an (almost) identical culture. But the uniformity of language and culture extends beyond the Kadero hills, to Dilling and

certain related hill tribes. Both the peoples of Kadero and Dilling are fully aware of this affinity, though they do not interpret it in terms of kinship or common descent. The two tribes share, above all, two paramount characteristics of their cultures—a clan system of 'symbiotic' type (which term I shall explain presently), and a cult of clan spirits (*uro*), with its order of spirit priests (*kujur*). I am giving elsewhere a detailed analysis of Dilling society; I may thus, in the present account, limit myself to these two aspects of the tribal culture, in which Kadero shows interesting variants of the Dilling prototype. Narrow though the orbit of our investigation will be, it will yet embrace a wide field of tribal life; for these two cultural traits pervade the whole social structure; indeed this pervasiveness is typical of a 'symbiotic' clan system and of this clan-bound spirit cult.

II CLAN STRUCTURE AND SPIRIT CULT.

I have developed the concept of 'social symbiosis' in *Man*, 1938, 85. It refers to a type of social segmentation in which the various segments (clans, as the paradigm) are both possessed of marked individuality and bound together in close interdependence. The single segment can only be conceived of in combination with all others and as a necessary part of the larger whole; for each segment is invested with certain specific functions which it exercises on behalf of the community at large and which, in their totality, assure the physical existence of the group. Like its biological prototype, then, the social symbiosis means an intensive 'living together' of individual organisms so that their very individuality subserves the existence of an embracing, as it were multiple, organism.

The necessity behind this social interdependence is twofold. It is, first, a biological necessity, crystalizing in the rules of exogamy: with marriage in the clan forbidden, the physical survival of the group depends on the cooperation of the group segments for the purpose of marriage and procreation. (In this form the symbiotic principle is present in most clan systems).

It is, secondly, a spiritual necessity, and rests on the belief that the various clans own different magic powers, all vital to the welfare

of the community. In the tribe which we are examining this spiritual interdependence is interpreted in a singular fashion : the clan-bound magic faculties are derived from clan spirits, which are known by the same name as the clans with which they are associated. The spirits are not conceived of as ancestral spirits, nor yet merely as guardian spirits of their group ; they are the groups themselves, personified, and lifted on to the plane of an eternal, mystic existence. When you ask a man to what clan (*uro*) he belongs, you ask him in reality to which spirit (*uro*) he belongs.

The personification of the clan spirits goes to the extent of ascribing to them human properties and actions. Thus the spirits have sex—being, with few exceptions, all men ; they are believed to have founded families (though the female share in this is left obscure), and are known as ancestors and offspring, as fathers, sons and brothers. The spirit pedigree is a topic on which the people spend much thought and ingenuity. There is no feeling, however, that it should be either complete or consistent. Certain clan spirits are left out of the picture, while others are dismissed with the summary statement that they are ‘ brothers ’—of unknown parentage. Though vague and inconsistent in themselves, the speculations about the spirit kinship are intended to lend logic and meaning to the social organisation. The spirit pedigree serves as a charter of the relationships obtaining between the classes which bear the names of the spirits. The latter mirror the former. Thus brother spirits are often believed to possess identical or similar magic powers, and their clans share both this magic and the priests who officiate in the spirit cult. In the spirit kinship one also finds the explanation of the marriage avoidances which exist between certain clans ; for they are taken to repeat, in the human sphere, the incest tabus which must govern the lives of the spirits. The age of the spirits, finally, and their place in the spirit genealogies, reflect their importance and the power of their magic : like old men and family heads, old spirits are persons of consequence ; yet like old men, too, they may be less active than the younger ones ; gentle and conciliatory where the latter would be obstinate and ferocious ; they may even have reached the age when they prefer to rest and to delegate their powers to their younger brothers, sons or grandsons.

Though stated with deep conviction, these beliefs are often belied by concrete conditions. The spirit beliefs represent a rationalization of social life in terms of the current ideology. Whether social changes occurred while the ideology lagged behind, or whether, with the social structure firmly established, the supporting ideology has been allowed to fade, is impossible to say.

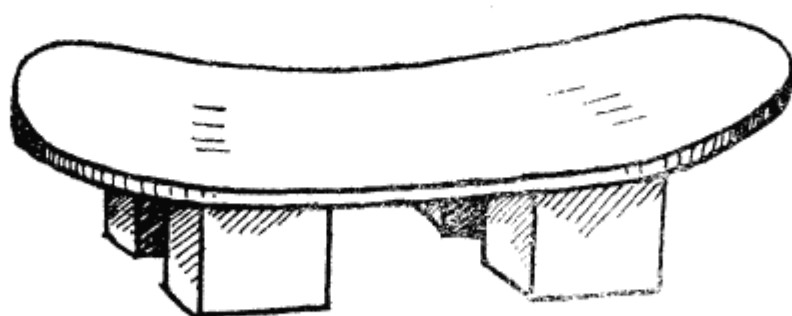
The magic powers of the spirits become attainable to man through spirit possession—through the medium of individuals upon whom the spirits are said to descend, making them their vessel, speaking through their mouth, and performing supernatural feats through their agency. I have described this cult of spirit possession in another tribe, the Koalib. (See "A SHAMAN CULT" *S.N.R. Vol. XXIV, page 85 et seq.*) Many of the facts related there, specially the description of the visions and the spirit 'trance,' apply equally to the Kadero version of the cult. But there are also certain significant differences. In Kadero the spirit possession is bound by the clan: a spirit can be incarnated only in the one class with which he is identified. The spirit incarnation is either temporary or permanent. It is believed that spirits first visit the human beings of their classes indiscriminately, trying first this and then that vessel, before they decide on a permanent incarnation. Repeated trances, impressive 'attacks' of spirit possession, are taken as signs of this intention of the spirit. A long and complicated ceremony of initiation then seals the pact between spirit and man.

Neither age nor social or economic position influence, in theory, the final choice of the spirit. In practice, however, these factors play a considerable part. For the complicated as well as expensive rites and sacrifices of initiation demand the willing cooperation of large groups. Thus the kinship group and the whole community are in some measure enabled to voice their preference and idiosyncrasies, and to reject candidates whom they consider unsuitable, for example, an unpopular fellow, a lazy farmer, or a man who has the reputation of being unlucky. There is, besides, one exception to the rule that social position is of no account in the mystic call of spirit priesthood: a chief cannot be a spirit priest as well. This rule does not imply a sharp division of secular and religious office; rather it divides two

sacred offices from one another; for chieftainship in Kadero is itself of a sacred and mystic order, and invested with religious duties and prerogatives.

The temporary incarnation of a clan spirit is known as *kujur*; the permanent incarnation, as great *kujur* or *kottonyujur*, i.e. stool-priest, after the sacred wooden stool which forms part of his paraphernalia (see illustration). It will be understood, then, that while there may be any number of *kujurs* in a clan, there can be only one great *kujur*. Once he is confirmed in his office, all the temporary incarnations of the spirit cease automatically. At least, this is the theory: if the practice contradicts it, one can always save the dogma by identifying the unexpected spirit manifestation as that of a brother or son (of whom no one may have heard previously) of the clan spirit. In this unpredictability of spirit possession, then, we discover the roots (or one root) of the spirit pedigree.

The Kujur's Stool



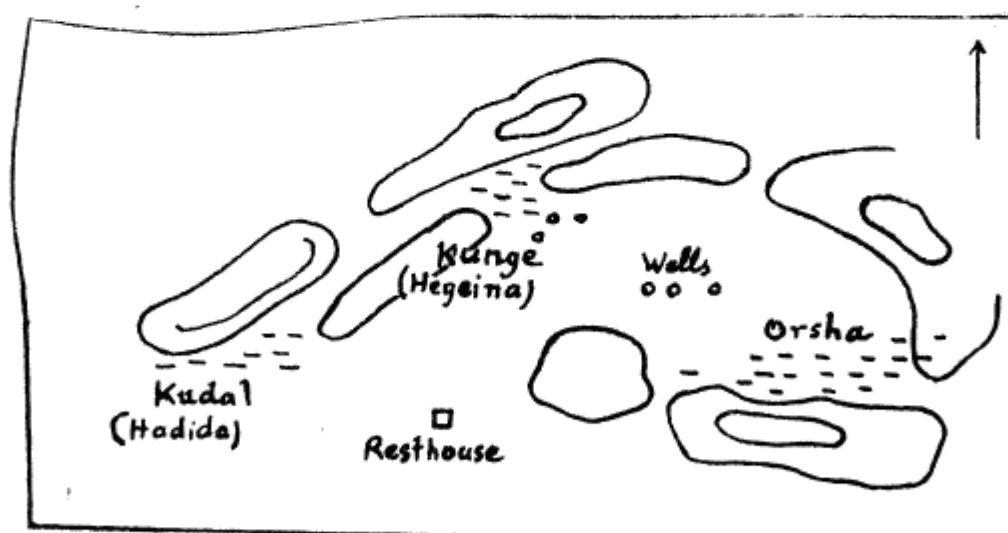
On the other hand, no permanent incarnations may appear for long periods, often, as we shall see, for many generations. The continuity of the spirit cult is assured by the appointment of ritual assistants, *kejat* (called *kejar* in Dilling, and often referred to by the Arabic name *gindi*, pl. *genadi*). Every clan which has once had a great *kujur* also has a *gindi*—in fact, a dynasty of *genadi*. For unlike the spirit-priest-

ship, which is unpredictable and bound up with individual predisposition (in native parlance: with the whims and predilections of spirits), the office of the *gindi* is hereditary. The *genadi* are the permanent priestly officers of the cult, the *kujurs* its inspired prophets.

III. THE SOCIAL ORGANIZATION OF KORTALA.

(1)

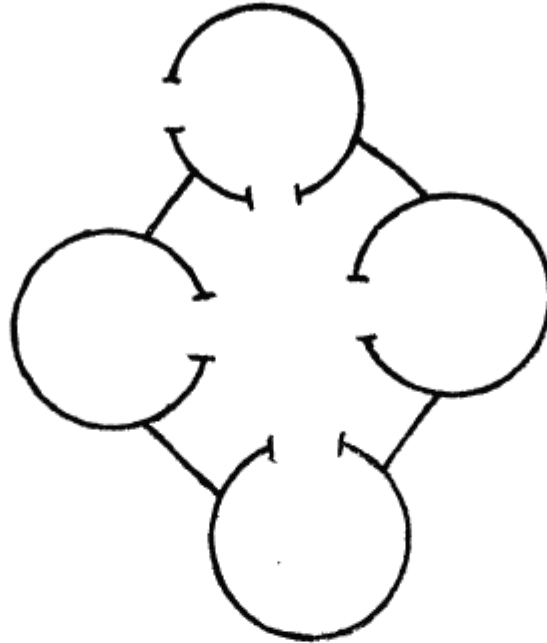
Like all Kadero communities, Kortala is divided into a number of localities, or hamlets, in which the people live in close, compact groups. There are four such hamlets: three are of ancient standing, and lie fairly close together, separated only by a low ridge and a narrow stretch of plain (see Map). They are: Orsha, Kunge (called Hegeina by the Arabs), and Kudal (Hadida). The fourth hamlet is some distance from the hill; it is much smaller and of recent origin, having been founded only in the last few years, by people who decided to live closer to their outlying cultivations. We shall disregard this recent settlement.



Sketchmap of Kortala

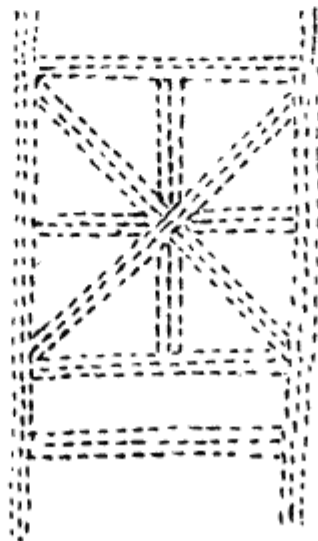
Let me say a few words about the Kortala homestead. The Kortala people are the last to have preserved the traditional house pattern of the Dilling-Kadero cultural group. It is a well-built house, with tessellated floors and attractively ornamented and painted mud-

walls ; it consists of four round huts, connected by walls, and arranged in the shape of a narrow square, thus :



Groundplan of Kadero House.

In Dilling and the other communities of Kadero this house is disappearing, having been replaced by the simpler, cruder huts of Arab type, irregularly arranged in clusters of three or four, and built to no particular architectural design. The wall ornaments of the traditional house are called *kελε*, like the scarification of brides, and are of the same design, illustrated below.



Scarification design.

The two forms of decoration are, in fact, closely connected: for when a girl is betrothed, the walls of her sleeping hut are ornamented, and when the marriage is consummated (still in her parents' house), her body is cicatricized in a like fashion.¹

The single homestead houses an individual family, that is, a man and wife and their unmarried children. A man who has more than one wife adds another two huts (a sleeping and cooking hut) for each wife or, if his house is of the traditional design, builds four more hut blocks close to the original house. Daughters leave the house of their parents after marriage, in the fourth or fifth month of pregnancy, to join the household of their husbands. A married son would build himself a separate house, not necessarily close to his father's house, but in the same locality. This habit of settlement, which tends to spread the patrilineal kinship group over the same locality, corresponds to the distribution of the (patrilineal) clans: they are equally concentrated in different localities, the individual clan occurring—with one exception—only in one of the three hamlets of Kortala. The exception is the large clan Urtora, which is split in two sections, one in Orsha, the other in Kudal. The two sections function in many respects as independent groups, and are, for example, allowed to intermarry.

The clan distribution and organization is somewhat complicated by the bracketing together of clans in class-groups. The twenty-nine clans of Kortala fall in three clan-groups, which have names of their own—Tekalko, Minyan and Kudal. The local division and the bracketing of clans overlap to some extent. One of the three clan-groups bears the same name as one of the three localities, Kudal, and the clans of this group occur only in this locality. But this locality

1. The operation is performed in two parts: the first on chest and thighs, takes place after the consummation of marriage; the second, on arms and back, when the bride moves into her husband's houses. The woman expert who performs the operation charges five piastres for the first, and ten piastres for the second sitting.

also contains one clan belonging to the Tekalko group of clans. The clan-group Minyan occurs only in Orsha, which locality it shares with the Tekalko clans; this last clan-group, the largest of the three, is spread over the hamlets Orsha and Kunge. The chart on page 49 shows this twofold distribution.

The division into clan-groups is vaguely associated with the differences in tribal extraction. The clan-groups Minyan and Kudal claim to be the original inhabitants of Kortala—to have 'always been there.' They were later joined by one clan of Tekalko, Uroamin, which is said to have come from the Ghadayat. Finally the rest of this clan-group arrived, this time from Jaalin country, and occupied its present settlements.

Individual clans and clan-groups each have their spheres of influence. The division into clan-groups determines the general interest which the sections take in one another and their insight into the social structure at large. The people belonging to one clan-group are largely unable to give anything like a precise account of the clans in the other groups or to describe their special characteristics, their marriage avoidances, even their magic faculties. In the great seasonal ceremonies of the community membership of the clan-group defines an important ritual prerogative, namely, the order in which the people may taste the sacrificial food or the first-fruits to the consecration of which the ceremony is dedicated.¹ This 'ritual tasting' represents the climax of the ceremonial, and the precedence which it entails is considered of much consequence. It follows this order: (1) Minyan clans; (2) Tekalko clans; (3) Kudal clans. Finally, the magic faculties

1. There are three seasonal ceremonies: (1) *Keral* or *horal* (known to the Arabs as *sibr el khail*, ceremony of horses), which marks the beginning of the New Year and falls in October—November, preceding the main harvest. (2) *Okōdu* (leaves of beans), which revolves round the consecration of the first-fruits of the year; it is performed in the middle of the rains. (3) *Noyor* (*sibr el gidad*, ceremony of guinea fowls), which precedes the new farming season. The three ceremonies have closely similar aims: they ensure rains and fertility, the regeneration of the land, and the health of man and beast.

vested in the clans repeat themselves in each clan-group, so that the single clan-group constitutes, to some extent, a self contained unit. Each clan-group also recognises one of its clans as a head clan, to which the other clans in the group are bound by ritual and political obligations. But we shall see that, even when duplicated or triplicated, the magic properties of the individual clans, retain some specific, unique element, which the co-existence of parallel versions does not obliterate ; certain vital clan-bound faculties, moreover, are without these parallel versions, occurring only in single clans : thus the 'symbiotic' interdependence of the whole community is ultimately re-established.

Magic faculties and political functions concern the individual clans only ; so do the marriage rules, which take no account of the division into clan-groups. I have already stated that the clans are exogamous. But the marriage rules also imply marriage avoidances between clans. Here we have another 'bracketing' of clans, which neither coincides with, nor derives from, the bracketing together in the clan-groups. These marriage avoidances follow a rather complex pattern, which I shall describe presently. Let me say here that they are largely interpreted in the sense of that spirit kinship of which we have spoken before. The incestuous degrees which are observed in the tribe are projected on to the spirit pedigree : and as the children of brothers must never marry, so the clans which bear the names of brother-spirits are forbidden to intermarry. The implied identification of clans with the children of spirits is somewhat inconsistent with the general beliefs, which do not see in the spirits ancestors or fathers of their group. Nor is, in fact, this interpretation of the marriage avoidances in itself wholly consistent ; for certain clans are allowed to intermarry although their spirits are called 'brothers' (*e.g.* Urde and Urosidunyon) ; and some of the marriage avoidances are one-sided ; *i.e.*, a clan A may not intermarry with clans B and C, though B and C themselves are allowed to intermarry.

The following is a list of the Kortala clans. The vertical columns give the clans according to clan-groups; the local distribution is shown on the left. As mentioned already, the prefix *uro*—or *ur*—means spirit; the whole word is the name of the clan. Each clan has a *hejat*, or *gindi*, that is, has in the past experienced a permanent incarnation of its spirit; a few clans, however, share their *gindi*: they are brother-clans, whose spirits own identical magic and are served by the same priests. The K behind the name of the clan indicates it possesses a great *kujur* at present, whose name is added in brackets. The names of the head-clans in each group are in italics, :—

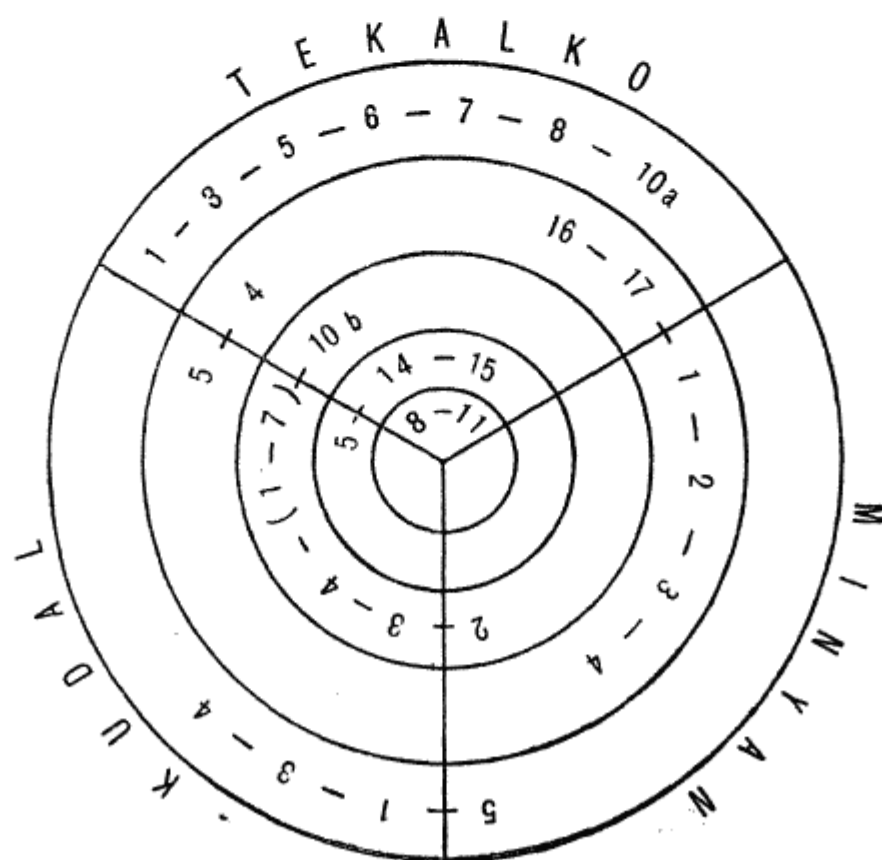
Localities	Tekalko	Minyaṇ.	Kudal.
Orsha	1. <i>Urkortala</i> , K. (Armadi) 2. Urkēla 3. Urkalwān 4. Uro-amin, K (Issein) 5. Urosotra 6. Uronānkola 7. Urotōle (shares <i>gindi</i> with 1) 8. Urde, K (Angolo) 9. Urogirād (shares <i>gindi</i> with 4) 10a. Urtora (section 1) 11. Urosidunyon	1. <i>Urbōgul</i> 2. Urkanyon 3. Urshamal 4. Urdar (shares <i>gindi</i> with 1) 5. Urawlu	
Kunge (Hegeina)	12. Urkwarsha, K (Yisuf) 13. Urtellan 14. Urokelle, K (Ahmet) 15. Urotalman (shares <i>gindi</i> with 14) 16. Urobeshit 17. <i>Urosābota</i>		
Kudal (Hadida)	10b. Urtora (section 2)		1. <i>Urkelleran</i> 2. Urotawile 3. Uromada 4. Uro-agya 5. Uronyen K. (Hamet) 6. Uroshildege 7. Uro-ātodu

(2)

The clan, like every social group, reveals its social effectiveness in the rights and obligations which it vests in its members. The rights and obligations are either 'pervasive,' *i.e.*, characterize the clan as such, and obtain equally in all clans, or 'diacritical,' *i.e.* vary signi-

ificantly from clan to clan. It is the latter category of rights and obligations from which this clan-system derives its 'symbiotic' order.

The 'pervasive' clan rights and obligations govern, above all, one domain of social life—marriage. The clans are strictly exogamous, although one conceives of no sanctions, secular or supernatural, of infringements of the law of exogamy. Sexual intercourse in the prohibited degrees is already an offence against exogamy. Certain clans, as we have heard, are forbidden to intermarry. The following diagram demonstrates the pattern of these interclan marriage avoidances. The clans are referred to by their numbers on the chart on page 49; clans whose numbers are connected by dashes are mutually exogamous. It is, as we see, a complicated pattern, which cannot be reduced to a simple formula. We see, moreover, that not all clans are fitted into this network of marriage tabus, and that certain clans are subject only to 'one-sided' avoidances.



In nearly all Nuba tribes the most conspicuous 'diacritical' clan rights and obligations are food tabus and similar semi-totemic avoidances. Avoidances of this kind are largely absent in Kortala. But the individuality of the clans is no less strongly expressed in those other rights and obligations which we have called 'sympiotic.' They bear on magic beliefs and religious practices as well as on the political organization of the group. Closely interlocked, these two aspects cannot be separated in our description.

Clan-group Tekalko.

1. *Urkortala.* The position of leadership which falls to this clan entails this compulsory tribute: any member of the clan-group who happens to have killed an enemy in war or on a raid has to surrender the whole booty to the great *kujur* (or *gindi*, if no great *kujur* is alive) of Urkortala. Behind this political tribute is the magic fear of the 'blood which dripped on the ground,' and which would kill the man who shed it, unless he removed the curse by this expiatory gift to the clan-spirit. The priest of Urkortala handed the tribute over to the chief, who would divide it in three parts, keeping one himself and bestowing the other two on the priests of Urkortala and Ursabota. Rather surprisingly, this recognition of the headship of the Urkortala clan applied only in the case of warriors on foot; if the warrior had been on horseback, neither curse nor tribute obtained. This privileged position of horsemen seems to reflect primarily military considerations: clearly, these shock troops of the tribe could not be restricted in their freedom of action by the fear of destroying human lives. The promise of unimpaired economic benefits from wars and raids would moreover encourage the tribesmen to acquire horses, and thus to add to the fighting strength of the group.¹ The exceptional role of horsemen is harmonized with the belief in the curse of blood by means of a special

1. Altogether, owners of horses are assigned a special, distinguished place in the tribal society: when they die, their bodies are buried on an *angareb*, covered with many gowns, and with great pomp; while pedestrains are buried with simple rites and their bodies are placed on the naked earth. In the funeral rites of the former two bulls are killed, of the latter, one bull only. We discover the rudiments of social classes, born of a division of labour vital in this warlike society.

rite which is enjoined on all who acquire a horse (see page 58) : this rite evidently disposes, in advance, of the magic dangers which horse-men would have to face.

The priest of Urkotala owns the magic of ' wars and spears ' ; he can prophecy the outcome of wars and assure victory. He possesses, besides, magic which would be involved in the event of epidemics. The clan is assigned an important function in the annual *keral* ceremony (see page 76). Its priest acts, finally, as one of the three ' king-makers ' of the community (which office we shall describe later).

2. *Urkela*. This is the royal clan of Kortala. As a clan, it owns no special magic ; but the chief, in virtue of his office would direct the great communal ceremonies, and would also be invoked to bless the horses of his people (see page 58).

3. *Urkalwa*. On the paraphernalia of this clan-spirit oaths are taken, perjury, they believe, causing illness and death. This clan owns no other magic : its spirit is said to be the oldest of all clan-spirits—so old, that he is no longer active, and leaves all magic activities to the younger spirits.

4. *Uroamin*. This spirit is invoked against cattle disease ; the priest would cure the sick animals by sprinkling them with sand. The priest also acts as ' king-maker.'

5. *Urosotra*. This spirit ensures that locusts (the edible kind) appear every year. He has nothing to do with locust plagues, however, which are believed to be caused by a different species.

6. *Uronankola*. Has no magic.

7. *Urotele*. Owns magic to prevent small birds from eating the young crop ; the priest throws sand over the threatened cultivations to make them safe.

8. *Urde*. Owns the fertility magic of grain. The priest of this clan plays an important role in one of the three annual ceremonies (*keral*). The beginning of this ceremony is announced by beating the great drum in the chief's house ; before this can be done the great

kujur or *gindi* must bring the chief some firewood for the kindling of the sacred fire (see page 76), and also seven small stones broken from a rock. The chief drops the seven stones on the drum, one after the other; their sound is said to call the seven spirits whose help is needed for the success of the ceremony: Urkortala, Urkele, Urkalwan, Uroamin, Urotele, Urtora, and Urogirad.

9. *Urogirad*. The priest of this clan is the keeper of the royal drum during an interregnum, and officiates in the abdication ceremony (see page 58).

10. *Urtora*. Shares in the fertility magic of grain.

11. *Urosidunyon*. Owns the magic of oaths (like 3), and rain magic. Twice a year, at the beginning and end of the rains, as well as in times of drought, the chief presents a cow to the great *kujur* or *gindi*, for a rain-sacrifice. A newly-appointed chief will present seven cows to the priest in order that his reign shall not be cursed by droughts.

12. *Urkwasha*. This clan-spirit (like one or two others) is called the Master of the Hill. The clan shares in the fertility magic of grain, and to some extent in the war-magic: men who return from wars or raids with booty would present one spear to the clan-spirit. The priest of the clan takes part in the coronation ceremony, sharing with the priest of Urkelle the duty of placing the sacred *tagiya* (skull-cap) on the head of the chief-elect.

13. *Urotellan*. Shares the ritual duties of 2.

14. *Urokelle*. Owns the magic of rain and lightning. The priest receives three cows from the chief every year, at the *okōdu* ceremony, to ensure rain. The priest also acts as king-maker and plays an important part in the coronation ceremony. This ceremony begins in the shrine of the clan-spirit, where the chief-elect spends the first seven days in ritual seclusion. The priest helps to clothe the chief in his robes of office (see clan 12).

15. *Urotalman*. Like 14.

16. *Urobeshit*. Like 17.

17. *Urosābota*. This is the second 'head-clan' of this group, levying a tribute like 1. The spirit is the master of leopards : only members of this clan may eat the flesh of leopards ; hunters from other clans must surrender the flesh and skin of the leopards which they killed to the great *kujur* or *gindi* of Urosabota, lest they themselves be killed, in revenge, by leopards.

Clan-group Minyan

1. *Urobogul*. Is the head-clan of this group, and master of ' wars and spears,' like the Tekalko head-clans 1 and 17. This spirit also owns the magic of oaths.

2. *Urkanyon*. Owns, again, the magic of oaths, and shares in the fertility magic of grain ; this clan is the first in its group to ' taste ' the newly-cut grain at the annual *okōdu* ceremony. The clan priest receives one cow from a newly appointed chief to ensure the fertility of the land.

3. *Urshamal*. Like 2.

4. *Urdar*. Shares the magic of 1.

5. *Urawlu*. Has no magic.

Clan-group Kudal

1. *Urkelleran*. The head-clan of this group levies tribute like the Tekalko clan 1. It is in an even more complete sense the master of ' wars and spears ' (*kell* means ' war '): its priest claims the gift of one spear from every man, in the whole community, who returns from a successful war or raid ; the priest also used to accompany the warriors into the field, carrying before them his victory-giving spear.

2. *Urtawile*. Receives a share of the spear-tribute levied by 1.

3. *Uromada*. Like 2.

4. *Uro-agya*. Owns the magic of rain, and of the fertility of the land.

5. *Uronyeyen*. Owns the magic of rains and lightning, like the Tekalko clan 14. Annually, at the *okōdu* ceremony, the chief

presents the clan-priest with a cow and a bull, which are sacrificed to ensure ample rains for the whole community. All the people dance at this occasion at the shrine of the clan-spirit. The spirit also possesses magic against the plague of locusts, and on the paraphernalia of the priest oaths are taken : perjurers would be killed by lightning.

6. *Uroshildege*. The priest of this clan officiates at the *okodu* ceremony ; he receives one pig and one robe from the chief for his ritual ministrations.

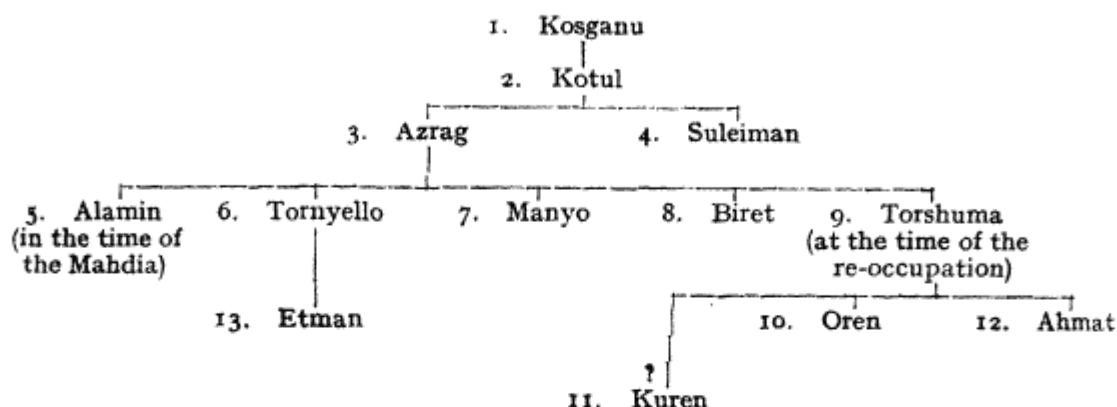
7. *Uro-atodu*. The priest of this clan can cure snake bite by spitting on the wound.

To this order of male priests we must add female *kujurs*, called *edoñujur* (from *edo*, woman), or *tor*. They do not serve special spirits, although, like the men-*kujurs*, they fall into trances and show all the symptoms of ' possession ' : but their trance is said to come from God (*bēl*). Thus these women have no place in the clan-bound system of magic faculties. They are medicine-women, curing disease of any type by extracting pebbles, pieces of wood, and such like, from the ailing parts of the body, who also have prophetic dreams. There are, at present, four female *kujurs* in Kortala. Their vocation is often (though not invariably) hereditary from mother to daughter.

(3)

The chief is called *shil* or, to give him his full title, *shil aletiyil*—chief of the skull-cap. As tradition has it, the first chiefs of Kortala belonged to the clan-group Minyan, that is, to the original inhabitants of the hill. But the magic of the sacred skull-cap proved too strong for the Minyan chiefs : it killed its wearer, and brought misfortune upon the people. They handed the rule on to the Uro-amin clan, but the same thing happened again. Finally, the chieftainship was offered to Urkele, this time with success. Since then Urkele has been the royal clan of Kortala. Chieftainship is hereditary, among sons or

younger brothers. This is the genealogy of the Kortala chiefs (the numbers before the names mark the order of succession) :



The tenth chief of Kortala, Oren, was killed in the course of a blood feud (see p. 77). He was succeeded by a certain Kuren, who is described as a 'brother-son' of Oren, although the biological relationship is not traceable. He was later deposed for tax embezzlement.

Torshuma, during whose reign the present Government was established, was too old at the time to look himself after Government affairs; thus his son Oren acted as his deputy, and was later appointed as *omda* by the Government. After his father's death, Oren combined in his person the office both of a traditional *shil* and Government chief (*omda*), as did also his successors Kuren and Ahmat. The latter proved an unsatisfactory Government chief, and was deposed as *omda*, retaining, however, his sacred, traditional office. After his death Etman became *shil*. The Government chieftainship, in the meantime, went to a new man, Sabun, a brother of the great *kujur* of the Urkortala. This appointment to the chiefly office of a man belonging neither to the traditional dynasty nor to the royal clan, is without precedent; nor has the modern division into secular and sacred chieftainship a precedent in the history of the tribe. It cannot be said that this experiment was an unequivocal success. The people are only too ready to attribute all misfortunes which befall the group (for example, the illness which visited the hill in 1939) to the fact that they are ruled by a Government nominee; and recently the great *kujur* of Urkortala exhorted a crowd

which had gathered at a funeral feast to kill the *omda* and to acclaim the *shil* as chief.

The election and appointment of the *shil* are surrounded by an elaborate ceremonial. After the death of a chief an interregnum of one year must elapse before his successor can be appointed. The interregnum must not last longer; for the annual ceremonies of the tribe may be performed once only, never twice, in the absence of a *shil*. The new chief is elected by the three clan-priests whom I have described as 'king-makers'. When they have decided on their new ruler, they go out to the cultivation where he would be working, as yet unaware of his destiny, seize him, and carry him back to the village like a captive, a *sagura* (the forked wooden post used to fetter slaves) tied to his neck. He is taken to the shrine of Urokelle, where he is released, and where he will stay in seclusion for seven days. The rites which follow are the same as in Dilling; I will mention only the final ceremonial—the ritual hair-shaving and coronation, for which the *shil* must travel to the Ghadayat, the ancient home of his clan (to-day, the village Abd el Bagha, not far from Rahad). He is accompanied by the 'king-makers' and other notables, and takes with him rich gifts for the Sultan of the Ghadayat, from whose hands he is to receive the sacred skull-cap.

The new *shil* must also present gifts to the *kujurs* or *genadi* of the 'king-maker' clan as well as certain other clans, whose magic assistance is essential to a prosperous reign: these gifts include seven cows to each 'king-maker,' gowns to Urtellan, Urshildege, Urkwarsha, Urbogul, and Urshamal; and various other gifts, which I have mentioned already. Once crowned, the *shil* stands under certain tabus which restrict his movements: he may enter only the houses of *kujurs* and *genadi*, but must never visit the homes of ordinary mortals.

The 'king-makers' have thus an economic interest in the appointment of the chief and will presumably always select one whose financial position is reassuring. The modern division of the chiefly office has vitiated the meaning of this institution. The Government chief, who, as the recipient of a salary, would be eminently qualified for the economic obligations, does not hold the sacred office in which they

are entailed ; and the *shil*, to whom these obligations fall, might not be in a position to fulfil them.¹

One ritual duty of the traditional chief, implying at the same time the right to levy a small tribute, is concerned with the magic of horses mentioned before. A man who has acquired a new horse will take the animal to the *shil*, together with the offering of a goat. The *shil* will pronounce a blessing formula and retaliate with a small gift of grain, which is to be the first, magic, food which the horse will receive from his master's hands. They believe that if the owner of the horse neglected to buy the blessing of the chief, the animal would fall sick and die. Indeed, before having made this gift to the *shil*, one would never admit to owning a horse, but maintain that one only 'borrowed' him.

The secular powers of the *shil* extended, under traditional conditions, to military leadership and the planning of wars and raiding expeditions ; to the conclusion of intertribal pacts ; and to tribal jurisdiction in adultery, seduction and homicide. Much more important, however, are the sacred aspects of his office—the direction of the annual ceremonies with which he is entrusted ; the gifts with which he assures the goodwill of the spirit priests ; and, apart from concrete duties, his endowment with the mystic powers flowing from chieftainship. The welfare of the community depends on them no less than on the ministrations of its priests. One visualizes the possibility of a chief failing in his duties, by secular or spiritual standards : a set ceremonial is laid down for such eventualities which enforces the abdication of an unpopular ruler, or a man whose reign has been unlucky, cursed with drought, illness or misfortunes.

The 'king-makers' are not 'king-unmakers' as well ; it falls to the *gindi* of Urkelle to act as the mouthpiece of public indignation. He would blow his horn, which would be the signal for the condemned *shil* to discard his regalia : he would throw his skull cap from him and

1. This discrepancy may partly be responsible for the recent conspiracy of the *kujur* of Urkortala, the foremost 'king-maker,' against the Government chief (incidentally his own brother). It is possible that this 'king-maker' first used his great influence among the people in support of his brother, securing his nomination for the Government appointment. Yet if he did so, he must have hoped to see the new office comprise the old *shil*-ship as well, for unless it did, the 'king-maker' would have to write off the traditional presents. As it happened, he was disappointed ; he turned his coat, and now appears as a champion of the ancient kingship.

put the royal drum outside his house. The former is taken away and kept by the priest of Urkelle, the latter by the priest of Urogirad. An interregnum of one year follows, after which time chief and people either become reconciled, or a new chief is elected. *Shil* Azrag, one remembers, abdicated and was reinstated nine times; *shil* Torshuma abdicated once, and he, too, was reinstated; Kuren *shil*-cum-Government-chief, abdicated in similar fashion, and was permanently deprived of his office. No case has ever been known of a *shil* refusing to accept the decision of the people.

(4)

Primitive political organization is essentially an organization for war and peace—war without, and peace within. Attacks on human life outside the political unit are conceived of as legitimate warfare and entail no sanction—save the diffuse, voluntary sanction of the revenge which the chances of war might offer. Within the political unit, such attacks are branded as crime: the society imposes penalties upon the perpetrator, or lays down compulsory acts of retaliation (in the form of blood feud) or expiatory rites, which will restore the peace that had been broken.

Kortala, then, lived in constant war with the Arabs, and the Koalib tribe in the south. Homicide committed in Kortala itself, against a fellow member of the community, entailed a sacred as well as secular sanction—purification by means of a ritual called *kerte*, and the payment of a fine.¹ The homicide who has shed the blood of a fellow tribesman will hurry home, without taking food or drink, and walk straight to the shrine of Urkortala. There he will sit, with his gun or spear across his knees, waiting to be noticed by the priest and people. The *gindi*, accompanied by old men, will take him to a nearby ant-heap and make him sit down on it. A fire is lit, so that the smoke may drive away the 'shadow' (soul) of the dead. The *gindi* then shaves the hair of the homicide on the side of his head. Afterwards the people go back to the house of the homicide, where the latter is

1. The people speak of it as 'blood money' (*diya*); but the meaning of this economic sanction is, as we shall see, that of a fine.

allowed to have his first drink since the deed was committed—of water first, and then of beer. Finally, the rest of his head is shaved. They believe that unless this rite of purification is performed, the homicide would be killed by the 'shadow' of his victim. Roughly a year after the *kerte* ritual, *i.e.*, at the time of the next *keral* ceremony, the fine (*diya ngiri*) must be paid. It amounts to thirteen cows if the crime was committed with a rifle, and fifteen cows, if committed with a knife or spear. This different assessment of the severity of the crime is, I believe, due to the belief in the 'magic of spears,' of which we have heard so much: the rifle, a more recent weapon, is not, like the spear, associated with the spirit powers which govern the life of the tribe. The fine goes to the *shil*, which rule still holds good, so that the Government chief, although he would be called upon to enforce the tradition, has no share in it.¹

Homicide within the clan entails no punishment in the traditional code. It is a crime whose gravity goes beyond human sanctions. Indeed the people maintain that this most hideous crime never occurs.

Between the two extremes of the traditional code, the licensed use of force without the political unit, and the penalties for homicide within it, we discover certain intermediate regulations. They represent the 'international law' of the tribe; they rest on special intergroup pacts which exclude and ostracize homicide between Kortala and certain other communities or tribes. Such pacts existed with Dilling, Ghulfan, and Nyima. The pacts were of a sacred rather than secular order, demanding the immediate performance of the *kerte* rite if the intertribal peace were broken, but no fines or blood money. The rite had to be performed also after inflicting injuries—if 'blood had dripped on the ground.' The pact with Nyima was specially strict: even if one only pulled a thorn out of the foot of a man of the other tribe and, in doing so, drew blood, the *kerte* became necessary. Similar pacts obtained between Kortala and the other communities of Kadero. Of these pacts, which reveal the consciousness of a tribal unity over and above the division into hill communities, we shall speak in the final section of this paper.

1. The Government courts fully recognize this rule. In a recent case of homicide the judge of the High Court advocated a reduction of the prison sentence if the fine (or blood money, as it was put) were paid over in full.

IV. THE SOCIAL ORGANIZATION OF DABATNA.

(1)

The people of Dabatna live on the low slopes enclosing a broad, well watered, rising valley. We can ignore the division in localities, which is much less clearly marked, either geographically or socially, than in Kortala. Nor are the clans of Dabatna subdivided in similar fashion. The nineteen clans are scattered irregularly over the community. Six clans are described as being of alien origin: three hail from the Ghadayat (Nos. 17, 18, 19 in our list); two from Dilling (15, 16); and one clan (14) is associated with a spirit who lived originally on an uninhabited hill called Dure; it is said that another clan-spirit, Urkella, found him there and persuaded him to settle in Dabatna. With one exception (13), the remaining clans and clan-spirits are all fitted into the familiar spirit pedigree, as fathers, brothers or sons. This is the list of the Dabatna clans:

1. Urmande (the father of all spirits).¹
2. Urkonyan (his brother).
3. Urtora (eldest son of 1).
4. Urkellan or Urkelléran (a brother of 3).
5. Uro-érenyan (a brother of 3).
6. Urkulda (a brother of 3, shares *gindi* with 5).
7. Urkellau (a brother of 3).
8. Urkwornean (a brother of 3, shares *gindi* with 7).
9. Urbāde (a son of 4).
10. Urshilburcan (a son of 4).
11. Uro-ómudunyan (a son of 4).
12. Urmasut (a daughter-son of 4, shares *gindi* with 9).
13. Urtorndo.
14. Urshedar.
15. Urwarkenuru.
16. Urkotu (brother of 15, shares *gindi* with 10).
17. Uro-awrndar.
18. Uro-ercunyan.
19. Urote.

1. He has a wife, the 'mother of all spirits' whose name is Timere; no clan, however, is associated with her, nor does her spirit appear in incarnations.

All clans have *genadi*, though some priests serve two clans and clan-spirits. At present none of the clans has a great *kujur*. The last incarnation was the late chief Noma, who died in 1932 (of cerebro-spinal meningitis). There are, however, numerous 'temporary' incarnations.

Again, the clans are exogamous and also linked with each other by mutual marriage avoidances which are traced back (not very convincingly) to the kinship of the spirits.

The marriage avoidances comprise largely pairs of clans, thus :

1	—	2
3	—	4
5	—	6
7	—	8
9	—	12
10	—	11
15	—	16

The three Ghadayat clans, 17, 18, 19, are equally forbidden to intermarry.

(2)

In the following I will describe the various clans, their magic faculties, and the functions which they or their priests undertake in communal life.

1. *Urmande*. The *gindi* of this clan is one of the three 'king-makers' of Dabatna. The (somewhat incongruous) recognition of his services is a monthly payment of one piastre which he receives from the chief. The clan-spirit owns the magic of rain and lightning.

2. *Urkonyan*. The clan-spirit causes one of the first-fruits of the year (cucumber) to grow, and lizards to multiply. The spirit would punish with an eczema anyone who stole his, the spirit's, property, that is, the gifts deposited in the spirit shrine; the *gindi* has, in turn, the power to cure eczemas (of any kind) with his spittle.

3. *Urtora*. Is responsible for the fertility of the land, which this spirit is believed to renew annually at the seasonal ceremonies. The clan owns, in particular, the magic which makes gourds and pumpkins grow : thus the people of this clan are the first to eat and 'taste' these first-fruits in the *okōdu* ceremony. The *gindi* can cure snake-bite with beer and spittle. The spirit is finally associated with leopards, in a mystic, semi-totemic relationship, which he shares with his brother-spirit *Urkellan*. Only people belonging to these two clans may kill and eat leopards with impunity ; if a man of another clan killed a leopard, he must present the animal to the *gindi* of *Urtora* or *Urkellan*, who would keep the head, skin and flesh, returning the right foreleg to the hunter. The spirit *Urtora* is one of the three clan-spirits on whom oaths can be taken ; one swears on sticks cut from the *iglet* or *rotoro* trees (gifts presented to the *Uro* annually, at the *keral* ceremony, by all owners of cattle), and perjury would cause snake-bite or guinea-worm.

4. *Urkellan*. Owns the magic of 'wars and spears.' This spirit also 'owns the land' and anything found on it. Thus all lost property found on the ground and all stray animals are forfeited to the spirit and his priest. Every year, at the *keral* ceremony, the spirit is believed to divide anew the various forms of clan magic among his spirit-relations, so that they possess valid magic in the coming year. All these magic powers, however, the spirit exercises on behalf of his elder brother *Urtora*, who is too old to look after everything himself. Oaths again are taken on this spirit, and it is believed that perjurers would be killed by lightning or by an iron weapon.

5. *Uro-érenyan*. This name is derived from the name of an evergreen tree *ere* (*tuko* in Arabic), which is used in the following magic : before setting out on a long and possibly dangerous journey one asks the blessing of the *gindi* ; the *gindi* supplies the traveller with a twig of the *ere* tree and promises him a safe return ('even as this wood remains unchanged, so shall you return'). The *gindi* is also one of the 'king-makers,' and receives from the chief the 'retaining fee' of one piastre per month.

6. *Urkulda*. This clan has died out. Its magic, which was concerned with the milk of cows, is now administered by the priest of clan 5.

7. *Urkellan*. Nearly extinct. Its magic is concerned with white ants and ant-heaps, and thus with the expiatory rite *kerte* after homicide, which is performed on an ant-heap (see p. 59). A similar rite must be performed whenever a man of a clan other than Urtora or Urkellan kills a leopard, lest the 'shadow' of the animal kill its slayer. The connection between ant-heaps and the idea of expiation is explained thus: since nothing grows on an ant-heap, the spirit of the dead would not dwell there; and since ants 'make everything clean,' they would also cleanse and purify a man who shed blood. The clan-spirit can finally be invoked against the small birds which threaten the crop; he would cause big birds of prey (*sogur*) to appear, which would drive little ones away. The purification magic of this extinct clan has not been taken over by another clan since it is shared by the brother-clan *Urkwornean* (*kwor* means 'white ants'), which is number 8 on our list.

9. *Urbāde*. The name is derived from *bade*, locust, and this clan-spirit owns magic to combat locusts. It possesses numerous other forms of magic as well: it ensures the growth of simsim and of fruit trees (whose first-fruits are 'tasted' first by the *gindi* of the clan), and the abundance of game, specially of giraffe. Hunters of giraffe present the *gindi* with the neck of the animal, two ribs covered with flesh, and seven hairs from its tail.

10. *Urshilburcan*, and 11. *Uro-omudunya*, share the locust and simsim magic of their brother-spirit Urbade.

12. *Urmasut*. This spirit inflicts dysentery on the thieves of his property, or whooping-cough on their children. The *gindi* can cure these afflictions, whatever their origin, receiving in payment a hoe or axe-blade, which he deposits in the spirit shrine. This is the third of the three spirits on whom oaths are taken: perjury causes dysentery and death, not only of the perjurer himself, but of his whole family.

13. *Urtorndo*. Owns the fertility magic of honey and of fruit trees.

14. *Urshedar*. This spirit causes guinea-worm (which the *gindi* can cure), and also the abundance of a certain edible beetle, called *nyon*.

15. *Urwarkenuru*. Shares the magic of 13.

16. *Urkotu*. This clan is long extinct, and its magic, which was concerned with the annual *noyor* ceremony, is now administered by clan 13.

17. *Uro-awrndar*. This is the ancient royal clan. Its spirit watches over the fertility of the women, and its *gindi* can cure barrenness by rubbing sand taken from the *uro* shrine on the abdomen of his patients. One goat, offered to the spirit, is the fee for the cure.

18. *Uro-ercunyan*. This spirit causes storms which destroy the crops. Every year, at the *noyor* ceremony, the *gindi* deposits a hoe in the *uro* shrine, which gift is to induce the spirit to spare the community from these disasters. The spirit is also believed to cause ulcers on legs, and to lend his priest the power of curing them, with water and earth.

19. *Urote*. Causes gum-trees to grow and hares and guinea fowls to multiply. At the *noyor* ceremony the *gindi* presents the spirit with a hoe blade to ensure a rich gum harvest,¹ and the young men, returning from the hunt which forms part of this 'ceremony of the guinea fowl,' bring an offering of a hare and guinea fowl.

Dabatna has four female *kujurs*, whose role and office I have described above.

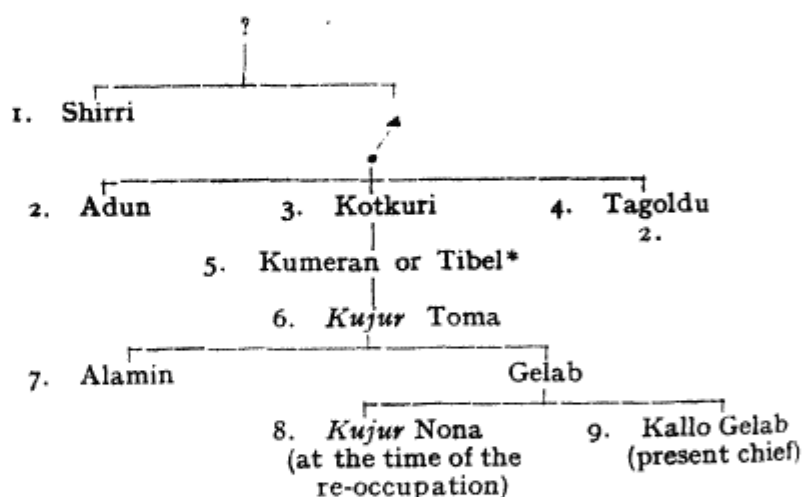
(3)

Long, long ago, the people will tell you, their chiefs were of the Awmdar clan, of Ghadayat origin; this clan is still known as *shilliri*, the 'chief's people,' although chieftainship is now vested in a different

1. The picking of gum which is of great economic importance in the north of Kordofan, can play hardly any part in the Kadero hills. The Dabatna custom thus seems to endorse the tradition of these clans that they immigrated from the Ghadayat in the north.

clan, Ūrkellan. Three chiefs of Awmdar—Bade, Awl, and Osse are remembered. The change in the royal clan is explained in a long and rather pointless tale ; it tells how, in the time of Osse, a famine ravaged the Kadero hills so severely that a man of Urkellan was forced to sell his son as a slave to procure food. The boy was bought by Osse, who brought him up like his own son. The slave-boy, whose name was Shirri, was of great help to Osse, and often acted as his messenger and deputy. Eventually Osse freed him and sent him back to his people and clan. After Osse's death they claimed the kingship for young Shirri. The royal and the pretender's clan met in pitched battle, which was won by the latter, and the kingship went to Shirri, of the clan Urkellan.

This is the genealogical table of the Dabatna chiefs :



* His name was Tibel ; Kumeran was his daughter's name : it is the custom of this tribe that fathers sometimes assume the name of their eldest child.

Dabatna chieftainship differs considerably from the chieftainship of Kortala. The coronation ceremonial and the ritual hair-shaving at the court of the Sultan of Ghadayat have been abandoned since the time of *shil* Kumeran. With the rites, the whole sacred aspect of chieftainship disappeared : there are no regalia, and no chiefly avoidances—save one, oddly inverted, tabu : the chief of Dabatna may never wear a *tagiya* ; for, since he has not been consecrated, the magic head-gear would destroy him. The disappearance of the hair-shaving rite is explained with the disappearance of slavery, since the gifts with

which the Kadero chiefs had to appear before their suzerain in the Ghadayat consisted largely of slaves—needless to say, an unconvincing explanation. More probably the ancient chieftainship came to an end when the nazir of the Beni Fadl established himself in these hills, in the time of Kumeran's successor: it may well have been by the influence of this Arab chief that the status of the 'sacred king' of Dabatna was reduced to that of a petty sheikh.

We note that, unlike the other Kadero groups, the people of Dabatna have chiefs who are *kujurs* at the same time. According to my informants, this double office came into being with the disappearance of the traditional chiefly office. The incompatibility of chieftainship and priesthood thus lapsed when the former lost its sacred significance. Deprived of its unique sacred powers, the chiefly dynasty must have turned, consciously or subconsciously, to that other sacred power and mystic experience which, attainable to all clans, materializes in spirit possession.

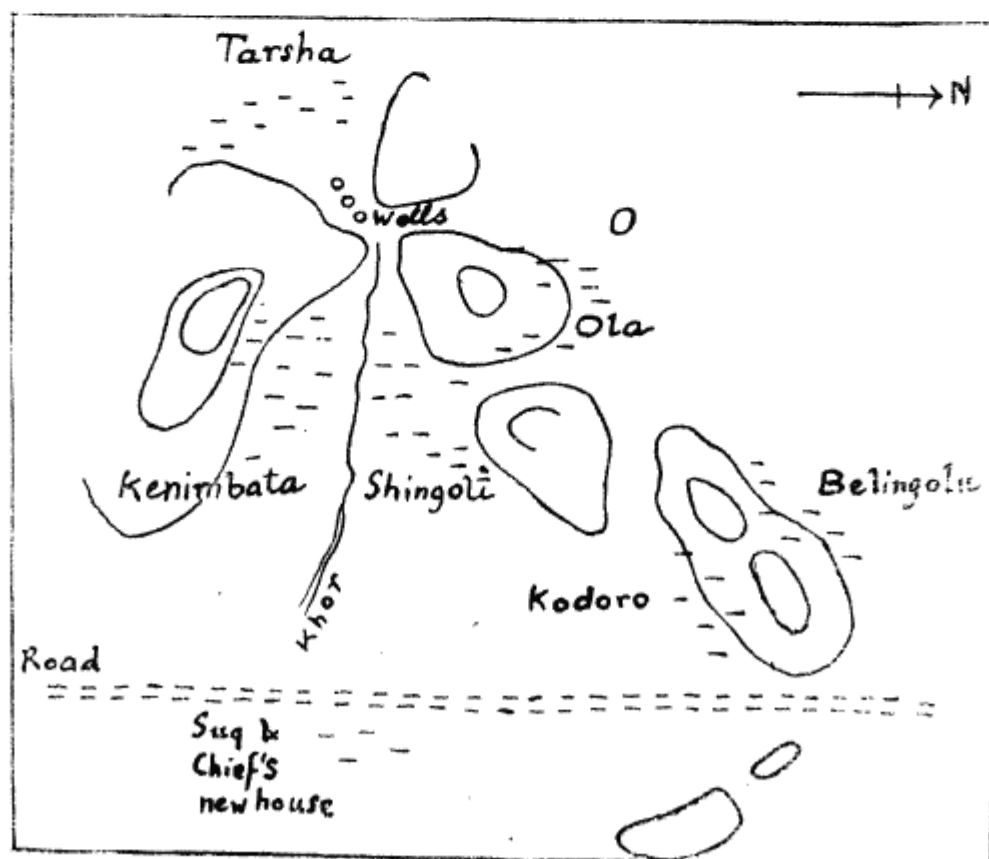
New chiefs are elected by the three 'king-makers'—the *genadi* of Urmande, Urtora and Uro-erenyan. The announcement of the election and the consecration of the new chief were the same as in Kortala. The new chief had to present eight cows to the 'king-makers' as well as to the following clan-priests, buying with his gifts a prosperous reign: Urbade, Urkellan, Urshilburcan, Uro-omudunya and Urmasut. The *genadi* sacrificed one cow at once and kept seven cows as the property of the spirits. If the *shil* had not sufficient cows, he would promise the *uro* one of his daughters, that is, pledge her future brideprice, which would amount to eight cows. These gifts, however, have lapsed, and all that remains of them to-day is the monthly retaining fee of one piastre. In the days of the consecrated chiefs a seven years' interregnum had to elapse between the death and the new appointment of a *shil*. During this period a brother or son of the late *shil*, again appointed by the 'king-makers,' would act as regent. If he proved a good ruler, he might be accepted as a proper chief when the time came. This interregnum, too, has disappeared, and the death of a chief is now followed immediately by the appointment of his successor.

4. THE SOCIAL ORGANIZATION OF KODORO.

(1)

This group lives scattered over six settlements, four of which lie close together, on both sides of a short, narrow valley, while two are situated a short distance away, separated from the valley settlements by a stretch of open country and a low ridge (see Map). A seventh settlement north of Kodoro, a small hamlet founded recently close to the distant cultivations, can be disregarded. The valley settlements are : Shingoli, Kenimbata, Tarsha and Ola ; the remaining two, Berengellu and Kodoro. The name Kodoro has thus two meanings (three, if we include the corrupted form Kadero) : it refers both to the whole hill community ('greater Kodoro,' as we propose to call it) and to one settlement within it. The traditions of origin suggest that this small Kodoro was the nucleus from which the whole community which now bears its name has grown.

Sketch map of Kodoro



The clans are largely restricted to localities, in such fashion that the four valley settlements comprise one group of clans, and the two other settlements a second and third. The clan-groups have no special names, and will be referred to in the following as A (in the valley settlement), B (in Kodoro), and C (in Berengellu). This is the list of clans :

A.	B.	C.
1. Uroshildége } ('brothers')	1. Urobogol	1. Uro-ata
2. Uroshedi } ('son' of 2)	2. Uro-egi	2. Uroshilgere
3. Uroman } ('son' of 2)	3. Urodogot	3. Uronyen
4. Urmóncumal } ('son' of 2)	4. Uro-eldo	4. Urshal
5. Urshilan or } ('son' of 2)	5. Uroderuwel	5. Urkorgal ('brother' of 3)
6. Ursulaman }		6. Urtuma
6. Urobertó		7. Urshumat

Only in the clan-group A does the spirit pedigree attain some completeness. The people of this group also mention one 'very old' spirit, Uromarel, the father of 1 and 2, and grandfather of 3, 4 and 5. This spirit has no clan of his own, being 'too old' to seek a human incarnation. The Uroberto clan, which stands outside the spirit family, claims the status of aboriginal inhabitants, and thus of 'masters of the hill,' while the other local clans are said to have immigrated from Kodoro. Yet this descent from the original settlement serves equally as a pretext for calling oneself 'masters of the hill.' On second thoughts, the informants who had mentioned Kodoro as their ancient home decided that they came, in the first place, from the Ghadayat. It was all very unsatisfactory, the chief and his old men being obviously bored by this whole discussion of long forgotten origins and migrations.

Nor is the information produced by the other clan-groups more convincing. The clans 3, 4, and 5 of Kodoro regard themselves as the original inhabitants; the clans 1 and 2 claim Fung origin. These are also the only two clans whose spirits stand in a kinship relationship, being father-brother and nephew respectively. In Berengellu information flows more amply. All seven clans are 'aboriginal' clans, and all had their ancient home in Kodoro. The people speak of a first, common ancestor of all the clans in these hills, a man bearing the somewhat grandiloquent name Belkodoro (*bel* means God, and *Kodoro* is evidently the place-name) : God Himself created him, and made him

'spring from the rocks.' Belkodoro had two sons, Ulmi and Ulnda ; Ulmi, the elder, stayed in Kodoro and became the founder of the clans in that settlement ; Ulnda left his birth-place, founded Berengellu, and his offspring in due course peopled all the other settlements and hills of Kadero. Significantly, one of the Berengellu clan-spirits, Urshilgere, is described as the brother of Urshildege in clan-group A (and also occurs, as we remember, in Dabatna). The informant to whom I owe this tale incidentally denied that there were any clans in Kadero hills which hail from the Ghadayat. According to him the link with that country was purely political, implying a quasi-feudal relationship, and nothing else.

Of all the clans in greater Kodoro only the clans 1 and 2 of clan-group A have great *kujurs*. The other clans are said to have been without such incarnations since the *Mahdia*. With one exception (clan C 5), all clans have *genadi*.

(2)

The marriage rules in clan-group A follow only partly the spirit pedigree and the incestuous degrees which it implies ; thus clans 2, 3 and 5 may not intermarry : but clans 1 and 4, though equally embodied in the spirit genealogy, are not bound by these avoidances. The 'aboriginal' clan 6 is free to inter-marry with all other clans. In group B we find two pairs of mutually exogamous clans : 3 - 4 and 4 - 5. This avoidance is one-sided, as we see ; for clan 3 is allowed to intermarry with clan 5. In clan-group C marriage rules are more involved. The following pairs of clans are forbidden to intermarry :—

1	—	2
1	—	6
3	—	5
3	—	7

One clan, clan 4, stands outside this net of marriage prohibition, though there is no other evidence of an exceptional position of this clan.

Between the different clan-groups only one marriage avoidance obtains, between the clans B 4 and C 2; the people can suggest no explanation of this isolated rule.

(3)

The magic faculties with which the clans are endowed and the obligations (ritual or political) which they or their priests undertake for the common weal are described in the following.

Clan-group A.

1. *Uroshildege*. The *gindi* of this clan is one of the four 'king-makers.' The spirit watches over the fertility of the farms out in the plain, and owns the magic of horses and leopards. The annual *keral* ceremony (the 'ceremony of horses') is performed under his auspices. A man who became the owner of a horse would send a gift of beer to the *gindi*, and receive in return some magic oil with which to rub the animal. Whoever hunts giraffe on horseback must offer the *gindi* the neck of the animal, whoever kills a leopard must present the *gindi* with the skin; but no other tabus or rites of purification are involved in this relationship of man and beast.

2. *Uroshedi*. Shares the horse magic of 1, watches over the crops grown on village and house farms, provides rain, ensures the fertility of livestock as well as of women, and protects all property.

3. *Uroman*. Has no special magic.

4. *Urmoncumal*. This spirit controls lightning and rain during the sowing season; he also ensures the growth of *simsim*. In recognition of these magic services the *gindi* or *kujur* receives a calf every seven years from the chief. In the event of drought the priest is also presented with a black robe, so that he might invoke the help of his spirit. The spirit finally owns the magic of 'wars and spears.'

5. *Urshilan*. This spirit ensures the abundance of honey, and its *gindi* is one of the 'king-makers.' The clan claim a rather curious prerogative—the guardianship of the 'road to Kordofan.' In the

old days, when the chief had to travel this road on his visits to the Kadero suzerain in the Ghadayat, the *gindi* would present the chief with a branch of the evergreen *tuko* tree, to ensure his safe return (see p. 58). A man of this clan would accompany the chief, and his duty would be to taste the water from the springs on the road before the chief was allowed to drink it. The chief paid the *gindi* a robe annually for the magic services of the clan.¹

6. *Uroberto*. One of the king-maker clans. It controls the rains which fall in the middle of the rainy season. If a drought happened at that time, the chief presents a bull and a goat to the *gindi* for a sacrifice to the spirit. The spirit also ensures the abundance of the edible beetle *nyon*; the insect is gathered by girls and women on the top of a hill which is said to be the habitation of the spirit.

Clan-group B.

1. *Urobogol*. The word *bogol* means 'leopard,' and the leopard is called the 'grandfather' of this clan. This semi-totemistic relationship goes further than in any other clan in the Kadero hills. The leopards are said to be the friends of this clan, never to attack its members, and to visit them, in a friendly fashion, in day-time in their houses. In turn, no man of *Urbogol* may kill a leopard. The clan-spirit also ensures rain, and the growth of beans, and the *gindi* acts as king-maker.

2. *Uro-egi*. Owns the fertility magic of grain, and causes hares and guinea-fowls to multiply.

3. *Urodogõt*. Owns the fertility magic of grain and simsim.

4. *Uro-eldo*. Another rain-clan. The magic is stronger than that of the other rain-clans, and its sacrifice (of a ram) in the event of

1. An informant from this clan complained bitterly that this custom had fallen in disuse since the 'road to Kordofan' had become a 'road of the Government.' He complained, in particular, that until I arrived no one had recorded the ancient rules of this clan, the optimistic implication being that, if these rules had been written up, the Government would have supported the old custom, and the chief would have continued paying the tribute to the 'guardians of the road.'

drought more elaborate. The clan-spirit also controls lightning, and is invoked in oaths, death through lightning being the penalty of perjurers.

5. *Uroderuwel*. Owns no magic.

Clan-group C.

1. *Uro-ata*. The clan-priest is the keeper of the sacred drum whose beating heralds all communal ceremonies. (There was some disagreement over this point with men of the Shilgere clan, who are equally the keepers of a sacred drum, and claimed this prerogative for their clan). This clan is also the first to 'taste' the first-fruits of the year; it shares the privilege with Urshal.

2. *Uroshilgere*. Shares the magic of the brother-clan Urshildege.

3. *Uroneyen*. Owns magic to produce belated rains, when the rainy season is already over, yet more rains are wanted, for which services the *gindi* is presented by the people with a goat (for the sacrifice) and a black robe (for himself).

4. *Urshal*. The annual 'leaves of beans' ceremony is performed under the auspices of this clan-spirit, whose people are the first to 'taste' the early first-fruits of cucumber and bulrush-millet.

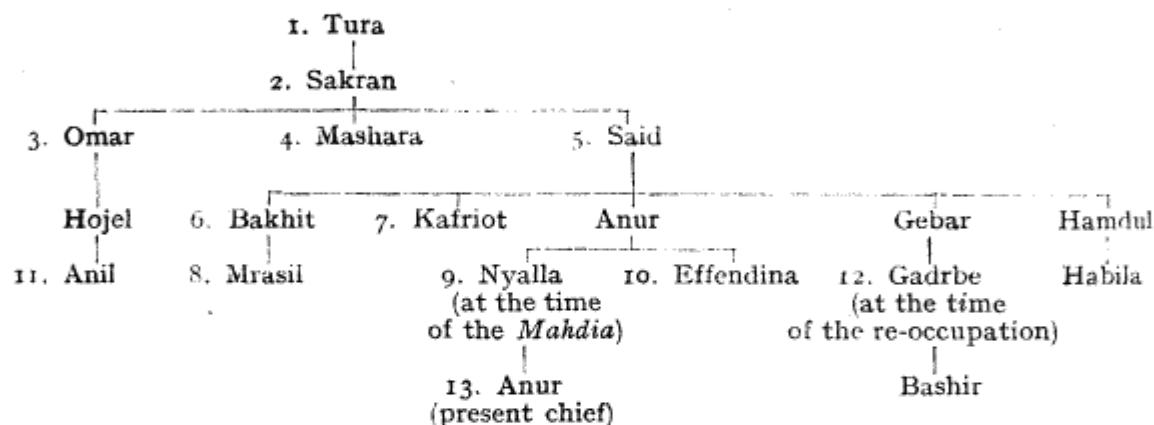
5. *Urkorgal*. The annual *noyor* ceremony stands under the auspices of this clan-spirit. Yet this is a most dangerous spirit, who would send blindness when angered. For this reason, the people explain, this spirit was never incarnated: no one would agree to become the human agent to so sinister a spirit. Indeed this name is never spoken (so that I had great difficulty in eliciting it); if one desired to invoke his help, one would do it in the name of his brother-spirit, Uroneyen.

6. *Urtuma*. Is invoked at the purification rite after homicide, like Urkellan in Dabatna and Urkortala in Kortala.

7. *Urshumat*. Shares the magic of giraffes with Urshildege.

(4)

Greater Kodoro forms to-day, at least, a single political unit, under one chief, who comes from the clan Urshedi. The chief's house used to be in the settlement Shingoli. The old house still stands, but is now only used to store the five copper drums, which are the regalia of the Kodoro chiefs.¹ An old woman, the father's sister of the present chief, is their guardian. The present chief built himself a new house outside the village, close to the motor-road and the new Arab *sūq*. This is the genealogy of the Kodoro chiefs.



Sakran is said to have brought the five bronze drums from the north which now form the tribal regalia. They were carried off to Omdurman by the Dervishes during the *Mahdia*, and later returned to Gadrbe by the Government. At Gadrbe's death, his son and heir Bashir was a small boy, and Habila, the son of Gadrbe's father-sister and a Dilling man, was chosen as regent by the people. He was not confirmed by the Government, which appointed Anur instead.

Under the present Government, the chief of greater Kadero has become the paramount chief of the whole of Kadero. As an expression of the new supreme position he adopted the Arab title *nazir*. The new rank and function do not seem to have divorced the chieftainship from its ancient usages.² The *shil*, or the *nazir*, is a sacred 'chief of the

1. The fact that the guardian is a woman has no special significance: she succeeded to this office at the death of the chief's father-brother.

2. I am speaking somewhat tentatively since I omitted to verify the extent of these changes. I am not certain, for example, whether the present chief has travelled to the Ghadayat for the hair-shaving ritual, and still adheres to the traditional gifts to the king-makers.

skull-cap' like his brother in Kortala. Like the latter he is elected by king-makers and crowned in the Ghadayat. Again, the newly-appointed chief must make the usual gifts to the *gindi* of the 'king-maker' clans and of other clans which hold a vital magic—thus :

seven cows and a sword to Urshildege,
four cows and a sword to Urshedi,
one robe to Urshilan,
one bull to Uroberto,
one bull every seven years to Urbogol,
one cow and a gown at once, and a calf every seven years,
to Urmoncumal.

The settlement Berengellu, too, numbers among its clans a royal clan, Uro-ata, whose claim to rulership, has, however, lapsed. The relationship between the two royal clans is obscure. Both chiefs are 'chiefs of the skull-cap,' though only the chief of Urshedi is crowned in the Ghadayat. The people, in fact, describe the chief of Uro-ata as the 'chief of the hill' as against the Uroshedi 'chief of (by the grace of?) the Ghadayat.' How far the former was independent is impossible to say. It seems that his was an ancient local chieftainship, which was later superseded by the 'immigrants' from the Ghadayat, or (if we trust the Berengellu informants) by the clan which was invested with the chiefly office by the Ghadayat overlords. Yet there is no concrete evidence of this, save an ambiguous nomenclature and the jealous deprecation, by the informants from Berengellu, of the other groups' claim of Ghadayat descent.

VI. TRIBAL UNITY.

The three hill communities of Kadero emerged from our description as self-contained, independent social and political units. Yet the conception of a wider, tribal, unit exists, resting on two sets of institutions: the organization of the main religious ceremonies, and the intergroup pacts which exclude warfare between the communities, of which I have spoken before.

To illustrate the former I will describe the most important annual rite, the new year's ceremony *keral* (or *koral*), which I recorded in Kortala.

The ceremony begins, as all annual ceremonies in this tribe, on a Thursday. The *shil* initiates the ritual proceedings by killing the fires in his house. The next day the young men from the whole community foregather in the chief's house. A young man of Urkortala kindles a new fire with the fire-drill, which must not be allowed to go out while the ceremony lasts. The *shil* has sent his daughter with a basketful of grain to the *kujur* of Urkortala who will use this grain for the making of beer. When the brewing of beer has begun in his house, all other households follow. The beer is ready in a week's time, on the following Friday. The *genadi* of Urkortala and Urkwarsha are the first to taste, in the ritually prescribed form, the newly-made beer. Now the people all go out to a low hill nearby, called Tugula, driving their horses and cattle to the appointed place on the hill ; a young man of Urkortala again kindles a fire : the smoke which rises up is believed to take all illness from men and animals. Afterwards the crowd returns to the house of the *shil*, where a big dance takes place. At night bulls, rams or goats are slaughtered in every house, and they feast on meat and beer. Dancing goes on for two weeks, different days being dedicated to dances before different *uro* shrines. With this dance the ceremony ends.

Now the different hill communities of Kadero perform this ceremony in a strict order succeeding each other at a month's interval. Kodoro is the first community to perform it ; Dabatna, together with Koldeggi, comes next ; Kururu and Kaffir follow ; Kortala concludes the series. This ceremonial order, then, fosters the consciousness of a tribal unity and defines the various communities as so many sections of a wider, embracing group.

Of the pacts of friendship which now stretch across the tribe one, between Kortala and Dabatna, goes back to the beginning of memory : blood-shed between these groups—even mere wounding which causes ' blood to flow '—is believed to bring leprosy on the assailant and his kin. Another pact, between Kortala and Kodoro, is said to have been

concluded in historical times, in the reign of *shil* Azrag of Kortala and *shil* Said of Kodoro. Until then, the two communities were enemies, and bloodshed between them was considered normal and legitimate. The two chiefs made peace, swore friendship, and presented each a spear to Urokalwan—the Kortala spirit who watches over oaths. The spirit now watches over the pact, and would cause anyone who breaks it to be killed by a spear (or, again, afflicted with leprosy—information on this point is conflicting).

Certain ritual observances offer an escape from the supernatural punishment. Immediately after he has committed the crime, the culprit must climb to the top of one of the hills, and stay there in rigid seclusion for one year. He must not see or be seen by anyone—save an old woman who will bring him food; specially he must not go out to the cultivations: if he did, the whole land would grow barren. After a year he must perform the *kerte* purification rite, which would lift the curse from him. These observances preclude revenge and blood-feud. The pacts between communities are thus meant to eliminate, not only wars and raids, but also that danger of peace which springs from the desire of retaliation. Unlike the law governing homicide in the political unit, the intergroup pacts replace revenge and retaliation, not with penalties, but with a ritual expiation—the mystic removal of a mystic stigma. Yet mystic sanction also contains the elements of a secular punishment: the self-seclusion of the culprit is at once prison sentence and pillory.

If we are to believe the people, these carefully set out rules have a merely platonic significance; for it is denied that homicide between these friendly groups ever happened. This denial emphasizes the horror in which the crime is held to the extent of idealizing the tribal ethics. I recorded one case of homicide which occurred, a generation or so ago, between Kortala and Kodoro; it was moreover settled, against all rules, by revenge. The brother of *shil* Oren of Kortala had killed a man of Kodoro, and, since this man had at the time no adult relations who might be able to avenge his death, had not bothered to perform the purification rite. When the sister-son of the victim had grown up, he happened to meet *shil* Oren at a funeral feast in Kodoro: the young

man killed Oren with a spear, thus avenging the long unexpiated crime. My informants maintained that, had Oren's brother performed the *kerte* rite, this blood feud would never have arisen. Vicariously at least, the ancient prophecy had come true, and the man who broke the pact sworn on a spear, also died by a spear.

One might ask why homicide between the groups is so much more abhorred than homicide within the group; why one is treated as a mystic offence, a sin, while the other is but an ordinary, prosaic crime. The answer lies in the weakness of the tribal unity. Crime and penalty have their place in the consolidated political unit that is, the hill community. There the evilness of the deed is taken for granted: whether it occurs or not, its ethical evaluation is above dispute, and the society merely punishes in obedience to this accepted code. But the bonds of peace between the communities are too weak to be upheld by any but magic threats. The breach of the peace is treated as a sin since it must still be proclaimed and established in its evilness. Indeed every repetition of the offence would call the whole code of 'international' ethics into question: hence the denial of its occurrence, which is nothing but a summary declaration of faith.

VII. CONCLUSION.

Perhaps the most striking characteristic of the social systems which we have been studying is their complexity, forced into the framework of very small groups—their surprising wealth of variants and their intensive segmentation, which is as irregular as it is complex. The irregular network of marriage avoidances, the equally capricious distribution of clan rights and obligations, owing to which some clans accumulate magic and political functions while others play hardly any part in communal life—all these features suggest a dynamic clan organization and a progressive segmentation. These features become intelligible only if we assume that clans have grown and been subdivided, that new clans have emerged, and that the clans old or new, are constantly absorbing (or losing) religious and social functions.

To some extent this development reflects the heterogeneous origin of these communities. The component group, from the coalescence of which the communities emerged, preserved their original identity in this clan system which allows its segments such varied individuality.

But we also discover a more deep-seated, twofold stimulus. It lies, first, in the very nature of the 'symbiotic' clan system. The universe of these groups is, as it were, mapped out in mystic agencies and magic forces, each the domain of a group segment. This mapping out is never static: it is changed by the urge of maintaining and extending the human control of the magic universe. When a clan grows weak or is nearing extinction, its magic properties fall to another clan; when clans grow strong, they would claim greater magic and political powers; and when new needs arise, clans would extend their magic dominion over new, uncharted fields. The different communities, moreover, have often followed different lines, probably influenced by their varying needs.

To become effective, this first stimulus needs the support and response of the second. It lies in the individualistic nature of the cult of spirit possession. Its visions and mediumistic trances are conditioned by the traditional identification of the clans with spirits and their magic aims and faculties. The visionary will be guided subconsciously by his awareness of the mystic manifestations that are expected of him as a member of his group. Yet individual differences are bound to break through; a cult resting on a mental state so close to the pathological and abnormal can never be fully bound by his 'normal' code of spirit manifestation. Indeed the people admit this unpredictable element in the spirit cult; they allow, at least tacitly, for the appearance of spirits whose manifestations are unorthodox and whose magic claims deviate from those laid down by tradition. We have met with a related instance—the appearance of great *kujurs* when no more incarnations should, by rights, occur (*see* p. 43). Both unorthodoxies are easily fitted into the dogma of the spirit cult by manipulating the elastic, persuasive spirit pedigree. That it admits of such manipulation is undoubtedly one of its *raison d'être*; for this ultimate unpredictability alone enables the spirit cult to keep abreast of the changing fates of the society.

THE DEFENCE OF NYALA 1921.

I

EYEWITNESS ACCOUNT BY ISHAG EFF. HASHIM.

(Translated by Mr. F.D. Kingdon).

This battle took place in September, 1921, and it is now known as Patrol No. 99. The following account is written by an eyewitness and there is no place in it for imagination or fabrication. If I leave out any small matter I may be forgiven for it all happened seventeen years ago, and this long period is enough to make me liable to overlook or forget details, but I am sure that the important events are still clear in my mind, and that nothing vital is missing in what I relate. I relate the details of the story from the first day I heard of it and very probably there were secret letters in the files between the District Commissioner, Mr. McNeil and the Governor Darfur, of which we were not aware, before September 20th, 1921, the day on which we first had news of the attack (*Note A*).

On Tuesday, September 20th, 1921 at 4 p.m., we were in the house of M.A. Hassan Eff. Mohammed el Zein, Sub-Mamur Nyala Merkaz, and after taking our lunch there came to us the Omda Adam el Gellabi of Daleiba in a distracted condition and asked to see Hassan Eff. Mohammed el Zein (*Note B*). And after he had seen him Hassan Eff. returned to us and told us to wait where we were until he returned from the house of the District Commissioner as there were events which made it necessary for him to see the District Commissioner at once. And more than that he would not tell us.

And indeed we waited outside his house until 6 p.m., and we were Ibrahim Eff. Khasadour, Yousif Eff. Ahmed Idris, and Ishag Eff. Hashim (the writer). And as we were getting impatient and inquisitive a policeman came and told us Mr. McNeil had summoned all officials to the Merkaz: and it was about 6 p.m.

All the officials then met and went to the Merkaz where we found Mr. McNeil and he told us that there is a man called Abdullahi el Suheini (*Note C*) who is going to attack the Merkaz tonight and with him some 200 followers or more. The District Commissioner Mr. McNeil then ordered rifles to be issued to all the officials and twenty rounds of ammunition each, and he sent for the merchants and issued them with rifles from the store and everyone was armed. Now the rifles which were issued to the merchants were "Krambil" from the rifles of Sultan Ali Dinar found with the natives when Darfur was occupied. The issue of arms was completed by 8 p.m.

We were then ordered to work with the police, and they were 50 in number and each one had 40 rounds of ammunition (*Note D*). We took over guard duty with the police until the next morning, spending the night in some anxiety. For to us it was difficult and awe-inspiring to carry out orders we had never had before.

On the next day in the morning the District Commissioner Mr. McNeil sent out some police and natives to find out the place of the fiki, and if possible, how many were with him. He also sent a letter to Governor Darfur asking him to send a force of mounted soldiers to help the police protect the Merkaz (*Note E*).

The situation remained unchanged until the evening of September 24th, and we were making barbed-wire entanglements round the Merkaz and digging holes to prevent horses from charging. All this time we had left our houses and were living in the Merkaz.

On September 24th in the evening while some of us were working with the police and others were asleep, a man from the Humr tribe called Abdel Rahim (*Note F*) appeared and asked to see Mr. McNeil who was with the force in the Merkaz, and the time was 1 a.m. Hassan Eff. Mohammed el Zein went to tell Mr. McNeil of the important news brought by this man and after he had seen the District Commissioner we understood that the fiki Abdullahi was about a day and a half away from Nyala and that he intended to attack on Monday, September 26th. The District Commissioner ordered the man to be put into prison for not bringing this news before, but after he had been in prison about an hour Hassan Eff. went to Mr. McNeil again and told him that the

man who had brought the news had not known it before as it had been brought to him by some of his relatives that evening. The man was then released and returned to his house at 3 a.m.

The District Commissioner considered sending another letter to Governor Darfur (*Note G*) to ask for sufficient forces in view of this latest information. At that time there was no post office and no telegraph office, but the post was brought on animals. Eventually he sent another letter by one of the police and instructed him to wear native dress and to go as fast as he could and give the letter to the first force he might meet. And the letter was written in Arabic and English.

On Sunday, September 25th about 3.45 p.m., we heard movement from the East on the Fasher-Nyala road, and after a while we heard that the first force of soldiers had arrived from Fasher under the Command of Yuzbashi Billal Eff. Rizk and M.A. Saad Eff. Omar (*Note H*). The force consisted of 64 mounted men but no machine gun. With the arrival of this force we all felt very relieved. The forces of the police, the officials, and the mounted men who had arrived with Billal Eff. Rizk were posted to protect the Merkaz, and the division was as follows. The M.I. men on the South and East and the balance of the police and officials on the North and West, and with them Hassan Eff. Mohammed el Zein (*Note I*).

After that we had a practice attack to examine our preparations, and to see that each force had its supply of ammunition and each official 20 rounds, and the night was spent.

From Billal Eff. Rizk we learnt that the policeman who took the second letter to Fasher had met them on the road and showed them the letter to Governor Darfur asking for sufficient forces. After reading the letter they had left all their baggage in a village and hurried to be in Nyala before the attack started. In fact they arrived at 3.45 p.m., on Sunday.

Since the despatch of the second letter to Governor Darfur, patrols had been sent out every day to the place of the fiki, but they returned without any certain information as to the number of those about to attack the Merkaz. The fiki had divided his followers into parties so

that when the patrol found the first party it was attacked and returned to the Merkaz with the number of the party only.

On Monday morning, September 26th, 1921 about 8 a.m., Bimbashi Chown, S.V.I., arrived from Fasher on his horse and with him one servant. He had left his hamla behind and hurried on to help the District Commissioner.

After his arrival they discussed the situation and the defence of Nyala.

At 8 a.m., the same day the District Commissioner ordered Saad Eff. Omar to take 16 soldiers and go and guard the Market. Saad Eff. went off to make his plans and at 8.20 a.m., we sent one of the servants to ask him to come to breakfast. We also sent to Hassan Eff. Mohammed el Zein who was in the District Commissioner's house with four soldiers watching for the enemy. For the enemy would come from the South. And as we were waiting for Saad Eff. to come to breakfast the servant came and said "Leave your breakfast, the enemy is at the Khor." Now the Khor was about one mile from the Merkaz and we saw the dust from the South. After a while we saw Hassan Eff. Mohammed el Zein coming back to the Merkaz with the police, and they were firing on the enemy.

The fiki's force when it reached the Khor was divided as follows (*Note J.*):— The horsemen on the East and West and the remainder on foot in the middle to attack the Merkaz direct and to prevent any of the Government forces escaping in any direction.

Ten minutes after Hassan Eff. Mohammed el Zein came back with his police we saw the enemy running towards the Merkaz brandishing their small spears, and the big spear which kills the man it stabs. The order was given for the attack and each man took his assigned place. The blow came from the South at about 200 yards, and after five or ten minutes the enemy's force entered the Merkaz and found some of the prisoners cooking food (*Note K*). They took the fire and set fire to one of the offices. Both forces were now fighting hand to hand, hitting and stabbing and firing, and everything was confused. Chaos increased and each party was killing the other inside the Merkaz, but the rest of the Government force retreated to the East and North

by order of the District Commissioner. I can only tell of what I saw myself at that time as each man was out for himself.

After coming out of the Merkaz compound to the North there were with me three police and a servant. We fell back and could not look for the number of the enemy that were following us, though we fired at them when we got the chance. They killed the police who were with me, and I could only think of how to save myself. The police were killed with small spears thrown from a distance to stop a man or kill him.

After I had gone about 200 yards to the North by the police lines I changed my direction to the East because the enemy after killing those in the Merkaz hurried off to kill the rest. After a while I met Hassan Eff. Mohammed el Zein by himself and asked him of those who had been with him in the South where he had been with Mr. McNeil. I understood from him that the police and infantry had retreated, and he knew not where. We decided to go to the Market to join up with Saad Eff. Omar, because by now the Merkaz was in the hands of the enemy, and we could not go there. And we came to the Market from the N.E., shooting any we met on the way, and there met us the Chief Merchant Sh. el Dabi Mohammed. We asked him about Saad Eff. Omar and learned that when he saw the enemy attacking the Merkaz and not the Market he took the force that was with him and went to the Merkaz. We wondered whether Saad Eff. had got into the Merkaz (*Note L*) or whether the enemy had prevented him. We could hear the violent beating of drums but no shooting, and decided to return to the Merkaz.

While we were walking back we met and fired at parties of the enemy, and they left us the road. At that time there was with us an Onbashi named Mabruk Gott. So we gave ourselves to God's care and after three-quarters of an hour we got back and found Saad Eff. Omar and Billal Eff. Rizk, who had met him after the first attack, coming out of the Merkaz. With them were the 25 soldiers and some of the police and infantry who had escaped death. And there too we found Ibrahim Eff. Khashadour. After a little while we found Bimbashi Chown dead about 3 metres from the Merkaz, and near him

Yousif Eff. Ahmed Idris, and we understood from the policemen's wives who saw the Arabs enter the Merkaz that Bimbashi Chown had defended himself vigorously and fired the six shots in his revolver and killed many, but in the end they overcame him and killed him with their big spears.

There too we found Mr. McNeil killed about two hundred yards outside the Merkaz as the police who were with him had most of them been killed, and the rest had retired. He too had defended himself with his revolver but they had overcome him and killed him with their spears. And though the enemy had spears only, yet they had killed a number of the police.

About half an hour after our return to the Merkaz we heard a drum beating in the East as the fiki himself was among the force of horsemen there, and it appeared that the force which made the first attack on the Merkaz had told the fiki that Bimbashi Chown and the District Commissioner had been killed and most of the officials and police and soldiers, and that the Merkaz was theirs. They did not realise that M. A. Saad Eff. Omar had since taken over the Merkaz and brought out boxes of ammunition and opened them.

The remaining forces then lined up and they were in number about 25—20 of them soldiers under Yuzbashi Billal Eff. Rizk and M. A. Saad Eff. Omar—and Hassan Eff. Mohammed El Zein, Ibrahim Eff. Khashadour, and Ishag Eff. Hashim.

Then we saw the enemy about 700 yards away from the Merkaz in the East, and they were not less than 7,000 in number and with them the fiki himself.

They again attacked the Merkaz and each of us had his share of ammunition and it was brought to us by the families of the police and officials. The firing was continuous and some were killed, but others came on. About 35 yards away M. A. Saad Eff. Omar saw a man riding a horse and ordered Shawish Darrag Abdulla to shoot the horse and the rider. The Shawish hit the horse only and at once the rider fell to the ground.

This man was the fiki Abdulla Seheini himself, and his supporters collected around him, lifted him up and put him on a donkey and

returned back with him. All this time the firing was intense, and they were completely unable to enter the Merkaz. As we fired they turned back carrying the fiki on the donkey, but the fiki received no injury during his retreat. We continued to fire and the police women broke into cries of triumph. Our force became brave and continued firing in spite of its small numbers, scorning death in spite of the large numbers coming against it. The firing increased until the enemy disappeared from view.

After a time Zubeir Sam and a dozen Taaisha (*Note M.*) appeared, and we distributed to them rifles taken from the police and soldiers who had been killed, and they mounted their horses and chased the enemy until they left the surrounds of Nyala. In this action the brother of Sultan Mohammed Kebkebe was killed. They came back again after an hour and a half.

We then collected the dead: of the Government force 16 men of the soldiers and 15 men of the police, Mr. McNeil and Bimbashi Cheown, Yousif Eff. Ahmed Idris, the police officer Beshir Mohammed, Hussein Eff. Mohammed Hussein, Ibrahim Tadros, and others whose names I do not remember. We decided to bury them that night, and Yuzbashi Billal Eff. Rizk made a list of those in the Army and M. A. Hassan Eff. M hammed el Zein a list of those belonging to the Merkaz, and the lists were sent to the C.O. Fasher and the Governor Darfur by a soldier disguised as a civilian (*Note N.*).

By this time it was 2 p.m. and the officials continued to carry out guard duties with the police two hours each day until the reinforcements arrived.

Each of the enemy wore a belt of "Zaaf" on himself and his horse so that they could recognise each other in the attack. Twenty of them were captured at the second attack, half of them from different tribes.

After the man left with the reports for Fasher the other Government men came in one by one to the Merkaz and amongst them Sh. Mahgoub Mohammed Osman, Kadi Nyala, and with him his brother Ali: we had not seen them since the first attack.

Then we collected up all the dead and dug a grave near the officials' houses and at 5.30 p.m. on September 26th, 1921 we buried

them. God's blessing be on them and those who died defending themselves and their honour to the end. As we covered their bodies with soil we were filled with grief and pain and thought of all the good deeds they had done. May God have mercy on them.

Then we heard from some of those who had been in the first attack on the merkaz that one of the M.I. soldiers Hamid Tambal (*Note O.*) had shown exceptional bravery and killed not less than 10 of the enemy and he had been concealed among the horses which we tied up in the merkaz.

It was now 7 p.m. and we decided to blow a bugle to let anyone know that the Government was still in control and some of the police and the Omda of Nyala, Adam el Nur and Melik Mustafa Gelgham (*Note P.*) appeared. The latter was the man who failed to inform the District Commissioner of the number of men who were going to attack the Merkaz and we heard later that prior to the first attack he had sent his family away to a village.

That night we kept tireless watch thinking the enemy might renew the attack in the dark.

During the night all the merchants and some natives came to the Merkaz, for no harm had come to them during the attack as the enemy was certain that once they had gained the Merkaz the market was in their power. Little did they think that God had decreed that the Government force would be victorious.

After the 2nd attack Ibrahim Eff. Khashadour went and counted the enemy dead in the East and there were about 700 and in the first attack not more than 30 had been accounted for.

That night we slept among the enemy dead for they had not yet been buried.

During the evening a policeman returned to the call of the bugle and the sentry challenged him and receiving no answer opened fire. Then everyone in the Merkaz opened fire thinking that the enemy were attacking and the firing continued intense for ten minutes from all the force arranged in a circle round the Merkaz inside the fence. When the firing eventually stopped we learned that it was only a policeman who, falling to the ground when he saw they were firing at him, escaped without any injury.

In the morning of Tuesday, September 27th, 1921 about 10 a.m. there came the S.M.I. Bimbashi Hunt, and with him fifty men from the Omodia of Kurdi under the leadership of the Omda Bushara (*Note Q.*) from the direction in which the enemy had retreated. He had been attacked by the enemy but the Omda had defended him with some fifty men he had collected to help, so Bimbashi Hunt arrived safely at the Merkaz.

After he had inspected the enemy dead, and had a look round with Hassan Eff. Mohammed Zein, he ordered the dead to be buried, being afraid of disease. Some 50 or 60 bodies were collected and buried in one grave.

Then Bimbashi Hunt asked about Mr. McNeil and was told that he had been killed together with Bimbashi Chown and some of the officials and soldiers.

At 11 a.m. we heard the sound of a bugle from the East and we replied with a bugle on our part and went to the market to see from whom the bugle came. After a short while we found a party consisting of Yuzbashi Mohammed Eff. Farrag Ghulam and M. A. Abdel Rasoul Eff. Abdel Galib and with them 60 soldiers and two machine guns arriving from Fasher to defend Nyala. But the defence of Nyala had been made a day ago.

They made entrenchments in collaboration with the force already there and all continued quiet. All that week forces arrived from Fasher until the whole force had assembled under Grigg Bey, who completed the arrangements for the defence of Nyala and for the attack on the enemy force in the place to which it had gone.

About October 20th news was brought to the Merkaz that Sultan Abukr Duda had arrested the fiki Abdulla el Suheini and two of his sons (*Note R.*). An infantry force was sent off with Ghulam Eff. and Ibrahim Eff. Ahmed the Muawin who had arrived in Nyala two days after the battle. This party met the Sultan and took over the fiki Abdulla and his two sons and brought them to the Merkaz. The machine guns were mounted pointing in the direction from which he came in case his followers should attack.

The prisoners were locked up until a court could be arranged, and the fiki was sentenced to death. The sentence was carried out in the middle of the market at Nyala on October 28th, 1921 in the presence of the inhabitants.

Some of his followers were arrested previously and some were brought in later and hanged. The force remained in Nyala for 2½ months, and then proceeded in the direction of Gereida, where many of the fiki's followers were assembled.

Sultan Ibrahim (*Note S*) had been appointed instead of fiki Abdulla el Seheini to attack the Government force. The Government force on leaving Nyala was divided into three, one went to the S.W. to Guweigin, another to Gereida, and the third to the S.E. to Goghana el Zarga. At Nyala there was also a force under a British officer, two Egyptian officers, and two Sudanese officers.

The Government force met the enemy coming from Gereida two days from Nyala and joined battle, and a large part of the fiki's forces was killed or captured.

The S.M.I. Bimbashi Hunt accompanied the force and found one of the enemy wounded on the battlefield. He went to treat him, but the man took out his knife and tried to stab Bimbashi Hunt but did not injure him.

Many cattle and horses were captured by the Government. Prisoners and booty were sent back to Nyala as the force remained out about a month. 15,000 cattle and 1,000 horses were sold by auction by Audas Bey.

Later Mr. Burgess arrived as District Commissioner, taking over from Bimbashi Yockney who had come to Nyala a week after the death of Mr. McNeil. With him came Ahmed Eff. Nasir the translator and Ex-Nazir Mohammed el Fagir el Gaburi as guide.

Mr. Burgess ordered 7 P.T. a day to be issued to everyone who accompanied the force on patrol 99 for the period he was with the force, and some of the Omdas were given rewards. But the Omda Adam Gellabi, who gave the information to Mr. McNeil on September 20th was an enemy to the Government and a follower of the fiki. He fled, but was arrested later and shot (*Note T*). This is all I know of patrol 99.

Some curious things also happened. El Tahir, one of the D.C.'s servants left Nyala on September 26th, the day of the attack, and arrived in Fasher on September 27th at 11 p.m. although the journey usually took six days by animals and he was on foot. A man told the Mamour Fasher Abdel Rahman Eff. Mukhtar and the D.C. Fasher, Mr. Nicholls the names of those who had been killed before the arrival of the written report from Nyala about the evening of September 27th.

After the first attack Ibrahim Eff. Tadros, who was the Merkaz translator asked Ibrahim Eff. Khashadour about some of the officials, and when he heard that some of them had been killed he left the Merkaz for Fasher and 600 yards away he was met by a party of the enemy who killed him—a pity for he was a young man.

Hussein Eff. Abdel Azim, Muawin Abu Gabra, was on his way to Nyala with £E. 8,000. After his arrival he told us that the Nazir Ibrahim Musa Madibbo of the Rizeigat had helped him on his way to Nyala with an escort. He went on to Fasher, after handing over the money to me, for at that time the Nyala treasury was in my charge.

During the first attack there was about £E. 8,000 in the safe, but nothing happened to it. We kept what we needed for Nyala and the rest was handed to Hussein Eff. Abdel Azim to take to Fasher.

I left Nyala on April 15th 1922 on transfer to the White Nile Province at Kawa. As I passed through Fasher Mir. Saville Pasha, Governor Darfur asked to see me and to hear my story and I told him all that had happened as stated here.

Our Government honoured us by giving a medal to everyone who was in the 2nd action at Nyala.

All this has been written with the help of Saad Eff. Omar who saved Nyala with the 16 soldiers who were with him guarding the market. Yuzbashi Billal Eff. Rizk and M. A. Hassan Eff. Mohammed el Zein assisted him in restoring tranquility to the inhabitants of Nyala, the officials and soldiers. Everything returned to normal and we forgot our troubles and the weariness of the two attacks.

Praise be to God for the safety of us all and Goodbye.

ISHAG HASHIM.

II

NOTES ON ISHAG EFF'S. ACCOUNT.

Mr. M. C. Wordsworth, D.C. Southern Darfur and others.

A. The first information Mr. McNeil had about the fiki came on September 5th, and was sent by the Omda of the Gimr who, to lessen his own guilt in previously harbouring the fiki without reporting him, considerably understated the scope of the man's influence. Mr. McNeil tried to get further information, but was not very successful for reasons given in notes K and P below. However, his report to Fasher on September 17th, which arrived there on the 22nd, though it considerably underestimated the danger was grave enough. Mr. Nichols, the Acting Governor, fortunately took prompt action and asked for military aid, and the first detachment left on the afternoon of September 23rd. For details of further reports see note E. For details of the remarkable ride of this first detachment see note H. This first report to Fasher contained one of the fiki's proclamations in which he declared himself to be divinely appointed as the Khalifa of the Apostle of Allah to lead the people in holy war. He called on all the faithful to come to him at Um Bellula, a lake in the Mesalat area on the borders of the Fellata and Habbania country, and stated that the time had come and that the wrath of the Mahdi would fall on any who neglected to hear. But the Habbania at any rate had not forgotten that the fiki was a follower Abu Gameiza (See note C.).

B. The present Magdum of Nyala (Abdel Rahman Adam Rigāl) who was then head of a section of the Fur which included those of Omda Adam el Gellabi says that the Omda himself did not come to Nyala, but sent his Wakil, Mansur, who is almost certainly the man referred to here. Col. Browne (once a Bimbashi commanding No. 6 Coy. of the W.A.C. at Nyala, who wrote a full account of this rising) states

that the news here referred to came in on Tuesday, September 20th, and that the serious defence preparations began that evening. For further details about Adam el Gellabi see note T.

C. There is no confirmation in the Nyala files that the fiki was ever called el Hussein. He is always now spoken of as Abdullah el Suheini. He was sometimes known as el Soghaiyer (from his stature) and his father was a certain Mohammed Idris, an Eringa of the Ora Section, from Dar Masalit. Suheini was turned out by the Sultan and went to Kalaka (the area round Buram in Southern Darfur) whence he was also expelled. He settled in the Southern Darfur Gimr area, where (see note A) he prepared his plans and when the rains were ending, so that the country was dry enough for movement but the ponds were all full for drinking he moved into the Southern Darfur Masalit areas, through the Fellata country. His growing strength was not reported by the weak local head-men. The Fellata heads merely stated he had passed by and the newly appointed Habbania Nazir (See note K) tried to keep out of the whole thing by lying low. Most of Suheini's adherents were westerners, either from the Sudan (Mesalit and Gimr) or from further west (Borgu, Burnu, Fellata, etc.). Many were ex-slaves of the Habbania, who had made villages in the boundary areas where Suheini first collected his army, at Um Bellula.

Col. Browne states that Suheini had been a disciple of Sh. Ahmed Abu Gameiza, and that he was one of his chief commanders in his battles against the Khalifa. Abu Gameiza's rising was only defeated in 1889 when his armies had nearly reached El Fasher.

D. The exact strength of the Nyala warders and police in 1921 is not certain, but one of the local survivors, who is still a warder, states that there were about 60 police and 20 warders, and that the available total strength for defence did not exceed 40, as men were away on duty, leave, etc. Koko Adam, then a Shawish and now a gardener, was, for instance, on his way to Fasher with an escort and a party of prisoners.

E. The letters sent by Mr. McNeil to Fasher were 6 in number, as follows :—

No.	Date and time at		Remarks.
	Nyala	Fasher	
1.	17'9 p.m.	22'9 11 a.m.	This was about the usual time for the journey (120 miles) and is the letter referred to in note A.
2.	20'9 7 p.m.	24'9 10 a.m.	Carried by the Ghaffir Mustafa whose horse gave out short of half way, so that he was passed by the 3rd messenger.
3.	21'9 7 p.m.	23'9 4.30 p.m.	Carried by Eisa Abu Shenab who is still a mounted messenger at Nyala. He says he actually reached Fasher about noon and found the M.I. Coy. preparing to leave. It was a Friday and the A Gov. was in his house. Eisa says he read the letter when he got back from seeing off the Coy.
4.	22'9 p.m.	25'9 7 p.m.	Eisa says this message was carried by Mohd. Saleh, a Dongolawi tailor, riding a police horse.
5.	24'9 p.m.	26'9 11.30 a.m.	This message was carried in the quickest recorded time. The messenger was probably Mohd. el Fekki, a Shaigi, riding a police horse. He met Eisa Abu Shenab, who was returning, at Musku and told Eisa he had met the M.I. at Douma and Capt. Chown near Minewashi.
6.	25'9 p.m.	27'9 8 p.m.	The messenger's name is not known, but he carried the news of the arrival of the M.I. at Nyala.

Just after the battle messages were again sent by civilians riding police horses, but in a few days posts were set up and daily reports sent in by them, each man going one stage to and from his post.

El Dabi, who was then Chief Merchant, says that all the messengers were civilians and that they either rode their own or police horses.

F. This was Abdel Rahim Abu Ashena now dead. He almost certainly gave false information on another occasion. Mr. McNeil was employing many persons of varied tribes to seek information. The only man who was really successful was a Taaisha called Mohd. Abu Duraan who brought in an exact account of Suheini's plans. He got most of his information from Adam el Gellabi's blind father. Mohd. Abu Duraan is now dead. He and Abdel Rahim were both later guarantors in Nyala market.

G. For details of the letters sent by Mr. McNeil see note E. It does not appear from reading them that he was in doubt about asking for more military aid, but he appears to have been in doubt about summoning aid from the local tribes. Small detachments of Taaisha, Bergo, and Tergam were already in Nyala to help him, and he did not wish to create undue alarm or to drag in more people than were necessary. The biggest local tribes that owned horses and upon whose loyalty he thought he could count were the Bergid and the Messeria. Neither had shown any sign of life, but he now decided to summon them and parties under their head-men came to Nyala. For their subsequent behaviour see note M below.

H. Col. Browne has left a good account of their march as follows :—

The orders to Yuzbashi Billal Eff. Rizk appear to have been that he was to reach Nyala by the 28th.

Mr. Nicholls came down with Bimb. Knox-White to inspect the column near the Awlad el Rif quarter, and they left Fasher about 3 p.m.

The intention was to sleep on the goz and "gail" next day at Abu Zereiga. However, just beyond Jebel Shala the column met one of Mr. McNeil's messengers. Billal Eff. looked at the letter and though

written in English the red ink on the envelope gave an impression of urgency. Accordingly Billal Rizk pushed on through to Abu Zereiga that night arriving there about 10 p.m.

Having left at 4 a.m. when near Marrabiki they met a Shawish of one of the Infantry Idaras in Fasher returning from leave in Nyala. He said the Dervish was reported at Gereida, and to be coming to Nyala on Monday; from this point Yuzbashi Billal Eff. ordered the trot.

Reaching Muski Rahad at 12 midday he offsaddled the horses but left the mule saddles on, just removing the loads and loosening their girths, and the animals were watered and fed.

At 1 o'clock while the men were breakfasting the Fasher policeman rode in on a camel with Mr. Nicholl's letter informing Billal Eff. of the now much graver situation in Nyala, and telling him he must try and get there by Sunday night.

Billal Eff. ordered "saddle up" at once and the column left Musku at 2 p.m., trotting for half-an-hour in every hour and a half, and dismounting for 10 minutes.

After stopping at sun-down at a Rahad, offsaddling, watering and feeding, and the men having dinner, on they went again, reaching Menawashi at 10 p.m.

By this time the hamla mules were so exhausted that Billal Eff. Rizk wisely decided to discard his grain *khorgs*, which were left in charge of the sheikh of the village. Besides they had with them 1 mule carrying reserve ammunition, 2000 SAA and 2 mules for the baggage of each officer.

Only half a hour's wait at Menawashei, and then on but now walking only, the men were in great spirits and sang most of the night. Dooma was reached at 5.30 a.m., and halt of 2 hours made for breakfast, and the horses fed. The horses were not offsaddled.

At 12 noon the column got to Siggara where the animals were watered and fed, with their girths loosened, and at 3.45 reached Nyala Merkaz, intact, without a serious casualty to man or horse, having covered the 120 miles in a little over 48 hours.

I. Col. Browne says—Mr. McNeil, anxious that his Police should bear the brunt of the attack, disposed them on the important south flank

of the defences, in spite of protests from Billal Eff. Rizk. Police were also holding to the southwest and west. The total number of Merkaz rifles, police, prison warders, and officials, seems to have been 45, but the point was that they all had single-loading carbines, whereas the M.I. were armed with Lee-Enfield magazine rifle (known to the Darfuri as "Abu Ashara.").

Apparently Mr. McNeil earlier declined to sanction the sug merchants application for shelter in the Fort with their merchandise, telling them they would be all right where they were. Now perhaps feeling able to afford some assistance from his reinforcements he sent M. A. Saad Eff. Omar with Shawish (now M.T.) Darag Eff. Abdalla and the Hamla men of the M.I. to take up a position in the sug. This party was 16 strong.

J. There were (vide Nyala eye-witnesses) three columns of footmen and two of horsemen, the latter being in front of the flank columns of footmen. The right-hand (easterly) column of horse and foot, with whom probably was Suheini himself, moved north-east through the market and was fired on by Saad Eff.'s force. The main column of footmen advanced straight at the merkaz from the south, with some horsemen from the left (west) flank, who had been turned by friendly horsemen (Taaisha and Tergam). Some of the right flank also seem to have been driven into the centre by Saad Eff.'s fire. His party also did much damage to the flank of the main column, at which they continued firing until Saad Eff. was afraid of hitting the defenders of the merkaz.

K. El Ghali Tag el Din, then a prisoner, and recently deceased after resigning the Nazirat of the Habbania (in favour of the son Ali mentioned below) was asked for an account of the affair from the inside of the prison. He stated :—I had been Nazir of the Habbania but was deposed and in prison because of the false charges of Hamid Um Beddi. The Melik Dud of the Mesalit was also in Nyala because of some tax troubles, which left only that useless old weakling the Sultan Mohd. Torkusha in the Mesalit area, and the frightened nobody (Mahmud Abu Saad) they had put in my place over the Habbania. Everybody knows

you can't trust a Gimrian or a Fellata an inch in these affairs, and even the Government now knows what arrant rogues their headmen were. So the time was just ripe for Suheini. Not that any Habbania joined him—they knew better than to expect a prophet among the Mesalit, but the Fellata and Gimr and all the westerners and ex-slaves, and of course, the Mesalit, all joined him, and there was no one in Kalaba to send reliable news to Nyala.

On the morning of the fight I was in a "*knrmuk*" with a wire-net door which faced the main prison building, and looked out through the gate of the merkaz. I don't know how many prisoners there were in the main building, but there were about 40 in our *knrmuk*.

When Suheini's army began to attack, I could only see the middle column. People afterwards exaggerated the numbers, but I am sure his army was not as big as many I saw in our old battles (at the time of the Mahdia and when the Fur-Arab battles were fought). I think the centre column was about as big as our tribe on parade (about 2,000) and I think his whole army was only about as big again.

When the merkaz was rushed the Mamur and the native officer (Billal Eff.) were forced away from the D.C. and the Vet. (Capt Chown). Only some of the police were left in the merkaz under the Onb. Tahir, who was later Shawish here at Buram. He was wounded. He had five or six men with him, some of them wounded. The office block of the merkaz was on fire, but the main body of the Mesalit had swept through taking the defenders with them. I saw some of the Mesalit trying to break open the door of the main prison. They thought it was the safe. I shouted to Onb. Tahir, who was in a room on the other side, and he shot the Mesalit and sent two men, Mohd. Borum and another, a Fur boy, to guard the door. I had sent for my sword and my wife had brought it to me. All the prisoners were shouting "*El Din Mansur*" and clamouring to break out. I raised my sword—it's the one I got from Ali Dinar which Ali has now: it has a silver handle—and said I would kill anyone who broke out. I was by the door. I could see the fight still going on, and I could hear the shots. I said the Government was not defeated and Onb. Tahir shouted he would shoot anyone who came out. That quieted the prisoners. The police

and warders were shooting anyone who came near the merkaz, but most of the Mesalit were busy looting where they wouldn't get shot at. We could hear the fiki's drum, tang, tang, tang, away to the north, beating to collect his people, and we could hear the rifles firing taff, taff, and tat, tat, rut, rut, and then the other officer (Saad Eff.) and some soldiers came back and shouted for ammunition. The door was broken open and the boxes broken and the women all carried the ammunition. Then the Mamur came and let me out of prison and later I was made Nazir again because of what the Mamur told the Governor."

El Ghali's wife says "I was with Ali Senousi's wife and Zereiga, one of the Nazir's women and some others in Adam el Nur's house, but we were moved to the Mamur's on the morning of the attack. We were making coffee when the attack began and I jumped onto an angareeb to look out over the fence. When we saw the attack we all bolted into a big tukl and Zeitoun (one of the Nazir's bastards—a Habbania ghaffir now) and Surour, a slave of Ali Senousi's, guarded us. Zeitoun had told me the Nazir wanted his arms, but the attack came before I could take them. The dervishes came into our compound and one wounded Surour. Zeitoun killed him with a sword but he had no spears so Zereiga rushed out and took him a bundle. She stayed outside and collected them for him when he threw them. A man stole our camel and donkey and all our baggage that was lying by them, but Zeitoun and Zereiga followed him. Then a policeman came and said I was to go to the Nazir with his weapons. I ran, taking Ali (who was about 3 then) on my back. The policeman guarded me. I pushed the Nazir's sword and revolver and ammunition through the door to him. He told me to put young Ali down by his side so I did, and then I ran back and found Zereiga had come back, leaving Zeitoun to follow the thief. She and I and Hamda, a Taaisha girl, whose daughter Fatma later married the Sarraf, were all later brought to the Merkaz by the Mamur, who escorted us, shooting off his revolver as he went. The Nazir was outside the kurmuk by then, and he had put Ali inside, so I went in too. Zereiga and Hamda broke open the ammunition boxes. Zereiga was as brave as a man, but I was afraid. She and

Hamda and the policewomen were afterwards congratulated by the officers.

Zeitoun got back our camel and baggage and the Nazir got back the Nazirship, so it was a good day for us."

L. Saad Eff. had nearly run out of ammunition and he decided that at all costs he must get more from the merkaz. He was attacked by a party of dervishes on the way, but beat them off. The present Magdum and a few others, armed with spears came to help them. Among this party was Adam Nur el Din, an ex-shawish from the Shendi Horse, who joined Saad Eff. with two other ex-soldiers, Khalifa Abdel Gubar and Kheir el Sid Soghayer. They were given rifles and were of great assistance. Their action was very brave as they had every reason to think they were joining a lost cause. Adam Nur el Din is now a Nyala court member and does war work in his spare time.

When Saad Eff. reached the merkaz, he found the three horseline sentries and about a dozen police and warders who had stood firm in the merkaz. Their names are given below, with their present whereabouts, as far as can be discovered,

Onb Tahir Mohammed Rahma (later Bash Shawish Baggara
Merkaz Police section—wounded—now a Fasher merchant.)

W. Onb. Ibrahim Khalifa (the orderly sergeant—badly wounded
in the arm and side—now pensioner at Nyala.)

Nafar Abdel Rahman Hassan Musmar—wounded—dead.

Nafar Mohamed Hussein—wounded (now B. Shawish El Obeid).

W. Onb. Idris Omer—dead.

Nafar Mohamed Bornu—Dead.

Nafar Allagabu Adam—(now cultivator Nyala).

Nafar Said Gubara—Dead.

Nafar Agab Sidu Fadlalla—Dead.

Nafar Ahmed El Said—Not traced.

Nafar Bakheit Ahmed—Wounded in foot (now in Fasher).

Under the east verandah of the Qadi's office they found a prison warder Onbashi Musa Rahma with a '*kokab*' (pronged fish spear) deep in the fleshy part of his right thigh. This very gallant fellow refused

to have the spear taken out, saying when the battle was over would be time enough. He merely asked them to break off the spear shaft and tie up his leg with a puttee. Later when the second dervish attack began he levered himself with his right hand and left leg in a sitting posture across the thirty yards to the firing line and took his part in the defence. He died a few years ago.

Saad Eff. is said to have been told where the ammunition was by the small son of Ibrahim Eff. Khashadour. The room and boxes were broken open, one police amazon taking the boxes up and hurling them to the ground to break them, but desisting when she found an axe. She was called Miriam Um Deira and still lives in Nyala. She and other women brought water and carried it and ammunition up to the roof and out to the defenders outside, breaking into yells of defiance and finally of triumph when the second attack was beaten off and the dervishes fled.

M. This pursuit was carried out by the Taaisha, Tergam, Beigo and Beni Helba friendlies, whose leaders were Zubeir Sam, Mohamed Kebkebe, Hamid Helu, and Khalil Adam. The Beigo and Taaisha had made a sortie against the fekki while he was collecting his forces before the second attack, as Saad Eff. wished to harry them and also to draw them to attack him from the north. Other friendly leaders who did well were Abdel Rahman Adam Rigal (Fur, the present *magdum*) Adam el Nur (Gimaa) Ali Abdel Galil (Fur) and Abukr Dudu (Dagu), but they had only small parties with them and few horses. The main body of friendlies with horses, the Messeria and the Bergid, stood aloof from the battle, waiting to see who would win, and fled after the first attack. Suheini's men had *zaaf* belts, but Mr. McNeil had bought red cloth to make distinguishing sashes for his friendlies (the tradition is that there was later an audit query about payment for this cloth). Just before the first attack began a merkaz ghaffir, Ahmed el Gahouri, saw a large body of friendlies to the north, behind Saad Eff., take off their red sashes. He rode over and warned Saad Eff., who posted men to watch behind him. Gahouri was later found killed, not by the dervishes. The memory of this black deed is still bitter in Nyala.

N. This messenger is said in Nyala to have been one Abdel Rahim, a civilian on a police horse. When he got to Fasher he was kept by the Acting Governor in a tukl, to prevent the news causing a panic, but one of Mr. McNeil's servants had fled after the first attack and had already spread the tidings. He was imprisoned in Fasher and was much referred to in the songs of the period, but his name has been forgotten. Fear caused him to run 120 miles in about 40 hours.

O. Hamid Timbal was a Shaigi and only a boy. His father had been a famous soldier under Ali Dinar. Hamid was one of the horse-line sentries and is said to have killed at least 12 men who tried to rush his position. Not one of the horses was lost.

P. This 'old fox' as Colonel Browne calls him, had been a Vicar of Bray first in Dar Borgu then under Ali Dinar and finally to the new government. He had married Ali Dinar's sister. Why he concealed from Mr. McNeil the true state of affairs it is hard to guess. He can hardly have thought that Suheini would gain at best more than a temporary or local success. It is possible that he was so used to lying and deceit that he just told Mr. McNeil whatever he thought he wanted to hear. There is no doubt he intercepted messages on their way to Mr. McNeil and that he made light of warnings given him by the Fur Shartais and the town omda Adam el Nur. He is said to have sent protestations of friendship to the fekki and to have sent him food the night before the battle and between the two attacks. He died in exile a few years after the rising.

Q. Hunt himself has recorded that he had an escort of ten men. The omda Bushra Abukr Gua, who still lives at Um Kardus and is over a local section of Zaghawa, says that they set out only ten strong but were held up by a party of dervishes, who, however sheered off when he told them to. He then sent back word for all his horsemen to turn out and in the end about fifty reached Nyala with him. There is no doubt that his timely eloquence and show of resolution alone turned back the first party of dervishes.

R. The arrest was made between September 29th and October 2nd (when letters announcing it are dated). The captors were the Melik Dud Nur el Din of the Mesalat and the two heads of the Fellata sections, Ahmed Hamid Abu Himeira and Abukr Geiger. The two latter had sat firmly on the fence while the fekki was preparing his campaign and only just managed to scramble down on the right side. The Melik Dud had warned Mr. McNeil what was happening but was kept in Nyala until it was too late.

S. 'Sultan' Ibrahim was the son of Abukr, the brother of Mohamed Torkusha, the Sultan of one section of the Mesalat. Ibrahim was later hanged in Nyala.

T. Adam el Gellabi was shot by a policeman called Ibrahim Jerankil (an Abyssinian, now dead). A patrol in charge of Abdullahi Abu Zeit, now a much respected court elder and *Mandub* at Nyala, was sent to round up Adam and others. Adam tried to resist arrest and was shot. He was the son of Basi Tahir (see note F). It is probable that he was loyal till he saw a special 'demonstration' that the fekki could turn bullets to water, but he also had an old score to pay off against certain authorities in Nyala and this probably influenced him. None of his people, indeed, no other Fur at all, joined Suheini. His son Hamza is now town Omda in Nyala.

III

CONTEMPORARY REPORT (1922).

By E. R. Burgess.

Many reports have been made about the attack on 26th September, 1921, and I have purposely avoided recording anything until now so that a better perspective might be obtained and the various eye-witnesses' reports sifted.

Certain facts should, I think, be clearly brought out to those unacquainted with Nyala.

The place is widely scattered over a large stretch of land which resembles *Khulla* dotted by palm bush clumps and *kitr*. About a quarter of a mile from the *Zabtia* offices (E.), lie the Suk and the tukls of Nyala residents. About a half or three quarters of a mile south of the *Zabtia* lies the house of the District Commissioner, near the Khor where the rebels all camped the night before the attack.

The wells all lie in this Khor (which is dry most of the year).

Reports mentioned a "Fort." This was misleading. There was no fort in any sense of the word. About 100 yards away from the *Zabtia* offices, two lines of barbed wire were put out in a straggling way. There were only two strands of wire in each line and this was of little value when the thousands attacked.

The offices were not joined together by a wall or any other fortification. The mob, therefore, could and did, enter by all open spaces after they had broken through the wire into the *Zabtia* square.

The numbers attacking were probably under-estimated and not over-estimated in subsequent reports. Quite apart from the many thousands who attacked under the nine flags, eyewitnesses (educated) testify to the many thousands they could see (from the roof of the *Zabtia* building) crowded far away by the Khor in the distance. Possibly 8,000 to 10,000 might be more accurate as in the big open space a group of a few hundred men looks but a small handful.

On the morning of the 26th, Bimbashi Chown had just arrived after a fine ride in which he left Fasher at dinner time, arrived Mena-

washi sunrise next day, got new animals and entered from the east, the following morning, into Nyala about 20 minutes before the attack at 8.30.

Mr. McNeill had suggested that a few men should be placed in the Suk (vide his Diary) and Yuzb. Bilal Eff. Rizk had done so. Although this division might be regarded as a mistake from a military point of view, yet it proved invaluable later.

There were only 15 mounted infantry in the Suk, the remainder (50) were in the *Zabtia*. All 45 police were also there (armed with carbines), seven Effendia including Muawin Hassan Eff. Zein (armed with carbines) and a few others armed with spears, all ex-policemen (the builder, the carpenter and the odd job man): also the Kadi and two sanitary barbers. These when casualties occurred used the rifles of the dead men.

The friendlies had been instructed to remain outside and the Messeria who waited under Gebel Nyala were acting according to definite orders.

There were 370 mounted friendlies, but the attack was so overwhelming that they all fled with the exception of about 30 of the Taaisha under Zubeir Sam and Beigu under Sultan Mohammed Kebkebi, and also 5 horsemen of Beni Helba under Nazir Khalil. A few carbines of dead police were subsequently issued to these men, and they assisted in the second stage.

At 8.30 the attack started. The mob surged forward under the nine flags. One flag and followers diverged to the Suk, one flag and followers diverged to the west of the *Zabtia*. The remaining seven flags and followers surged over the barbed wire inside the *Zabtia* buildings within five minutes, in spite of the heavy fire poured into them. This fire was estimated to have killed about 150.

Everyone—police, mounted infantry and officials—retired individually with spearmen attempting to kill each. The numbers of spearmen appeared to vary considerably, some being fortunate to have only 10 trying to spear him and others 50 or 60.

It must be remembered what a low and animal type of person the average Messalat or Fellata who attacked the Merkaz was. From

prisoners captured at the attack (stupid and *merrissa*-sodden) it was plain that the lowest type of district inhabitants formed the major part of the attackers. All were on foot. The horsemen, except leaders, stayed behind in the Khor. Their bravery was kept up only by extreme fanaticism and numbers, and it has been stated that if the number following any individual was small, by killing one or two of them the remainder would break off and join some other party.

At this stage the *Zabtia* square was deserted, except for some 50 odd would-be looters, who had entered the offices, ransacked cupboards, turned up papers in the hope of finding money, and in the end had set fire to the two Muawins' offices on the west side of the square.

Bimbashi Chown, at the door of Mr. McNeill's office, had been mortally wounded, being speared at the office door and gradually fighting his way round the corner to die a few yards off the back of the office. By sheer physical strength and bravery both he and Mr. McNeill accounted for the death of many before and after they had been wounded. The latter was killed a few yards further back with many dead all round him.

The Accounts Clerk who fought near him was not killed.

The main force of rebels had made off east with the idea of cutting off the retreat of anyone to Fasher. They were at the back of the town and many had congregated beyond a large *tebel*di tree near which the Fiki Abdullahi was. This main force did no looting, they only burnt: and all the *tukls* and *rakubas* near the Suk were destroyed.

Yuzb. Bilal Eff. Rizk and Muawin M. A. Hassan Eff. Zein had gone off to get the 15 mounted infantry from the Suk. Some merchants came back with them. All the police except 12 were still fighting far back about a mile away near some cultivation, as were all that was left of the *Zabtia* party of mounted infantry. Those that escaped seemed to be those who had the luck to hold their pursuers at bay until they decided to wheel off and join the Fiki and the main body near the *tebel*di tree.

When the two officers and mounted infantry and merchants arrived at the *Zabtia*, only about 50 were there, of which some 43 were in the burning Muawin's offices, overcome by smoke and unable to escape.

Some other spearmen rushing in had set fire to the straw roof while the first party had been turning out the papers. Subsequently 43 burnt bodies were extracted. A few shots rapidly cleared out the remainder.

To deal with the main body of the rebels on the east near the t be'di tree, the 15 mounted infantry and 12 police were lined up about 100 yards off the Zabtia buildings. Local *carambals* (French antique pattern rifles) were issued to the 12 merchants, who had some ammunition for them. This small force of 27 police and mounted infantry, 12 merchants with arms of little value, and the few remaining Effendia, were responsible, during this second stage of the attack (under Yuzb. Bilal Eff. Rizk and Mulazim Awal Hassan Eff. Zein), for a splendid and desperate defence of the Zabtia. The police wives who were in the Zabtia, as will be seen, proved their value and deserve a large share of the credit. (They and the merchants mentioned above have since been rewarded by presents of animals captured by Patrol 99).

It was then about 9 o'clock, or a little more. The mounted infantry had shot away all their ammunition. Luckily there were about 11,000 rounds of police ammunition (reserve) in the store. Hassan Eff. Zein had this quickly opened. The women were organised as ammunition carriers across the 100 yards space to the firing line, and as the masses appeared round the Fiki about 600 yards away at the tebeldi tree, bullets were poured into the mob literally in thousands. For half-an-hour or so the fire was heavy enough to stop any advance by the Fiki and his followers. The women brought up water for the men to drink, and above all, kept up a lulu-ing which encouraged everybody. This lulu-ing is stated to have had a great effect, and more so when the massed thousands advanced and got within 50 yards.

This is no exaggeration, and many witnesses have given the distance as much less.

After three-quarters of an hour's hard shooting the advance from the tebeldi tree began,—the Fiki with trumpeter, drummer and flag bearer.

Just over the hundred yards' distance the trumpeter was hit and then the drummer. The mob was seen to waver at the sudden cessation of noise. But they came on. The flag bearer was then hit and, finally,

when all the Zabtia defenders had given up hope of stopping them the Fiki was hit at 50 yards distance and carried off. The mass turned and, eventually, dispersed.

The number of rounds expended from the police ammunition alone was over 8,000. If to the 600 dead picked up be added a proportionate number of wounded (900 to 1,000 at least), the number of hits per round expended appears to be good, when the circumstances are considered.

The horn, the drum and five flags were captured, and are now in the Nyala offices. Most of them are patch-work bits of material, with Koran quotations written or sewn on to them.

Some Extracts From the Life and Travels

of

THEODORE KOTSCHY

(Obtained by B. H. Tothill from the German of a portion of)

RELIQUIAE KOTSCHYANAE.

Description and plates of a number of undescribed or little known plants collected by Theodore Kotschy when he accompanied Joseph von Russeger to Southern Kordofan and the highlands around Fazughli on the borders of Abyssinia in the years 1837-1839. Foreword by Dr. Georg Schweinfurth. Biographical sketch by O. Kotschy. 35 lithographic plates by T. Kotschy. Published Berlin 1868 by Georg Reimer.

EARLY LIFE

Theodore Kotschy was born April 15, 1813 in a small hamlet, Ustron, near the Carpathian Mountains in Austria. His grandfather was an organist and his father a pastor of the Evangelical Church and he and his brother Oscar also seem to have been intended for the ministry of that church but Theodore took to Natural History and especially Botany instead. Their father supervised the education of the two sons and two other boys at home in a private gymnasium. Theodore studied such subjects as German, geography, drawing, history, natural science, physics, learned to play the piano and organ and sang in the choir. He seems to have developed his botanical bent very early for when his father took him to Krakow in 1825, the Curator of the Botanic Garden there, Professor Oesterreicher, permitted him to take specimens of all the trees in it, and in the same year he accompanied some other scientific men on an excursion to Babiagora, the first alp of the Carpathians. He also prepared specimens of the flora around his home and sent them to such eminent botanists as Treviranus, Goppert and Schwagrichen. In 1828 he travelled for a month with and at the cost of Herr Hausleuter and saw something of

the Central Carpathians. He read the travels of Cook, Forster, Banks, Prince von Neuweid and Alexander von Humboldt and told his mother that one day he too would make such journeys. In 1829 he and his brother, travelled in Poland and Russian-Poland "always botanizing and carrying heavy packs." In the summer of 1832 the two brothers travelled in Germany visiting museums, Botanic Gardens, Universities and so on, meeting some interesting people in Berlin, Leipzig, Jena and Dresden.

The winter of 1832-33 the brothers studied again at home and then attended an evangelical gymnasium at Teschen. Here Theodore seems to have preferred Botany to Theology and spent much time in learning to prepare and mount specimens skilfully. In the autumn of '33 the brothers went on to Vienna ostensibly to study more theology but there too Theodore became acquainted with a number of botanists and became even more determined to become one himself. He got included in numerous collecting parties, helped Dr. Endlicher in determining 260 undescribed plants from Trinidad and worked with a Herr Pohl on Brazilian plants in the Brazilian Museum. He went on a collecting trip through Croatia, and some of the islands of the Adriatic, parts of Italy and the Alps. He was sent on a collecting journey in Rumania. This, briefly, is his background and training when at the end of 1835 he was engaged by Dr. Joseph Russegger as botanist and zoologist of an expedition to the Middle East and Africa.

YEARS OF TRAVEL IN MIDDLE EAST AND AFRICA.

Dr. Joseph von Russegger organised an expedition to examine the mineral resources of the territories under the jurisdiction of the Viceroy of Egypt, Mohamed Ali, and secured the services of Theodore Kotschy as Botanist and Zoologist of the party. Kotschy also undertook to supervise provisioning the party when necessary. He was delighted with the appointment but had very little time—about 14 days—to prepare for it. He secured some materials for collecting plants and other natural products from the Curator of a museum. As he proceeded he sought counsel and advice and was supplied with

books and maps from capable men in various countries visited but was never able fully to compensate for the lack of adequate preparation at the beginning of his engagement. Overwork and bodily fatigue, indisposition and illness all had to be contended with but he overcame many of his difficulties and made excellent collections.

Kotschy joined his director at Trieste and they sailed January 16, 1836. They called at Corfu and other islands and then at Greece. At Lepanto Kotschy secured some useful books and maps and there a physician, Dr. Veit, joined the party. They climbed Mount Ida on Crete. Arriving at Alexandria they were accorded a salute of guns. They made various official contacts and Kotschy was particularly attracted by the German Consul, Herr von Dumreicher. They visited Alexandria, Cairo, the Pyramids (where they saw a slave market). Kotschy made some collections and dispatched his first case of specimens back to Europe on April 28th.

The party then sailed for Syria and visited Palestine, Cyprus, Tarsus, The Lebanons, and crossed over into the upper Euphrates valley. Before returning to Alexandria Kotschy had collected 80,000 specimens of 1500 species and had dispatched them to Europe in 14 large cases. The party returned to Alexandria with a settled plan of visiting the African highlands.

Accordingly, in December 1836 they proceeded to Aswan by boat. Kotschy collected plants along the Cataracts. They proceeded overland through the desert from Korosko. Midway across they reached an oasis with a new sort of palm stand (*Hyphaene Argun* Mart.). They passed Murrat el Mora on February 17. Later they became so short of water that they had to abandon some of their gear and press on towards the Nile. Animals were panting and humans nearly exhausted when they met a man with a camel laden with water who relieved their thirst and they finally reached the river again at Abu Hamed. There tropical vegetation suddenly appeared on the banks and islands of the Nile. Sun-birds (*Nectarinae*) fluttered among the Mimosae and twining plants and mighty Dom Palms were seen.

They travelled on South by boat and kept a guard against possible attacks from Bisharines. They passed Berber on March 1st and went

on to the mouth of the Atbara, where they landed. At night they saw the constellation of the Southern Cross. South of the Atbara, the first Ibis were seen and Dr. Veit shot one for their collections. Hippos were numerous and caused damage to crops on nocturnal feeding excursions.

On March 13, ten weeks from Cairo, they reached Khartoum at the junction of the White and Blue Niles. The river, which was then low, had a width of 2,000 fathoms. There were many water fowl to be seen. The town was surrounded by desert covered with whitish sand and consisted of tukuls made of reeds and Acacia wood. Blinding dust storms were frequent and expedition members were affected by the climate.

They met the Pasha and discussed their travel plans with him. The expedition instructions left von Russegger free to proceed further or to return immediately. Kotschy was anxious to go further and the Director agreed to do so. A roomy dwelling was procured near a garden and they enjoyed a period of relaxation in the shade of tropical Tamarinds. The plant presses were kept busy and excursions made in and around the town. There were Berberines and Fungs, Shilluks and Dinkas with elaborate coiffures and slaves from distant parts such as Darfur, Begarmi and Bornu. The Date Palms were less thriving and well cared for here. On March 24th Dr. Veit left the expedition and collections were dispatched.

They left Khartoum and proceeded up the White Nile. Except Hedenburg and Ruppel Europeans had not previously travelled through that part and Kotschy was delighted with a sense of pioneering. They passed Jebel Musa on the left bank. The day passed swiftly with strong breezes swelling the sails. Impenetrable forests were seen on the Nile banks. One evening a shooting party was arranged and Dr. von Russegger brought down a monkey but as it was a mother with a young one Kotschy was distressed and vowed never to shoot a monkey himself. They reached Mangara which was the objective of their river journey as it was unwise to proceed into the country of the Dinkas and Shilluks without military escort. There was a red flowered climber in the forest which was peopled with monkeys, parrots, doves

and "birds of paradise." Seventy to eighty Nile craft were built there yearly under the supervision of Muli Kacheff, a Turk. To the south there was wilderness on the banks and obstructions of tree-trunks in the stream. Hippos and crocodiles were numerous and a shot to disperse the latter wounded a hippo. At the end of March they visited a camp of Shilluk wood-cutters at El Ais returning to Mangara by boat. Kotschy weighed the probabilities of being able to penetrate much further into the continent. Lightning on the horizon warned them of the approach of the rainy season. April 4th was "15 degree warm" but nights were cold. Many water-fowl were about. The cook of the party Giovanni, became ill and later died in great pain. A grave was dug between two Mimosae and he was buried April 5th. This was very discouraging to the rest of the expedition each of whom envisaged a similar fate.

April 6th camels were loaded and a start was made towards El-Obeid. First they passed through savannah until they reached the vicinity of "plant-rich" Arashkol. Towards the south they saw Jebel Bachi. Nomads wandered everywhere. They met a transport of slaves with a military escort on camels which was coming from the Nuba Mountains. The rough handling which the slaves received helped to explain the hatred existing between black and white, the only wonder being that it was not greater.

Acacias became fewer and later they came to "Akaba" or steppes which were grassy and where antelope were seen. A camel driver was bitten by a snake and Kotschy made an incision into which he put ammonia but the local custom was to sear such a wound with a hot coal. Mimosae became thicker again and on April 9th they reached a settlement called El Edejet where the people were accustomed to eat the abundant locusts which had a flavour like cray-fish. After days of great heat they passed a porphyry mountain. They met a band of pilgrims on their way to Mecca from the depths of Africa. A man who was ill came to them for medicine. Another man had a guinea-worm in his knee. They talked to natives about animals and were told of one which suggested the existence of Unicorns. Beautiful Mount Mughnus appeared which contained meadow-iron ore. Kotschy had

been familiar with the iron industry and was very interested. Leaving Tendar they passed the town of Khorsi in a pleasant setting. Here ostrich eggs were offered in exchange for medicine. At mid-day April 13th they halted under a great Baobab (Tebeldi) and Kotschy was greatly impressed with this "Pachyderm of the plant world." From higher ground El Obeid could be seen ringed round with cultivation. In the night hyenas howled. Late in the evening of April 15th, Kotschy's twenty fourth birthday, they arrived at El Obeid the capital of Kordofan.

On April 16th they made official calls. There was cholera there and it was not unusual to find a corpse lying in the road. Doctor Russegger became ill and had to go to bed. On April 20th Kotschy made an excursion to Jebel Kordofan. While resting under a baobab he observed an eclipse of the sun. At night they were molested by the natives dwelling on Jebel Dair. From its top Kotschy saw sand or clay hills to the south. Around Mulbas he found very good native gardens with returns of 250 fold. He returned to El Obeid on April 23rd.

On April 29th the expedition proceeded from El Obeid. The reflection of heat and light from the clay stones was very unpleasant. They met their military escort at Mulbas on May 1st. It began to rain. There were many tamarind trees and a small forest along a dried up brook. They passed light Mimosae thickets with stems 2-4 inches thick and two fathoms high. They crossed a rocky hill-land and then a muddy plain. The so-called *Euphorbia venenifica* appeared in great numbers. Leaving the trees they stopped at the foot of Jebel Hadra. It was a beautiful day with clouds in the southwest. There was elephant spoor about. Water was seeping from the bank of a dried rain brook. They reached Sheibun at the end of a day's journey. From the top of Jebel Sheibun a fine panorama was seen. From there Kotschy made an excursion eastwards in the cool of the morning and returned laden with plants and insects collected.

From Sheibun to Tira it was hard going for the caravan through rocky hilly terrain. Natives were naked but for some bits of the leaves of the Deleib palms.

On May 10th they reached the native gold-washings at Tira "41 degrees N. Latitude" (patently a mistake = 11 degrees N.) Kotschy botanised around the sluice gates. The gold had no interest for him. With longing eyes he looked away south to unexplored territory. There was no mountain of any size visible but only hilly sparsely forested country. He made a short excursion south from Tira which yielded twenty-two species.

On May 15th the signal was given to start the return journey. Dust clouds rolled and the going was difficult. Then they would become drenched with rain and would have to travel in wet clothes. At times their animals and equipment were in danger. They passed through thorny thickets where camels were feeding and where elephants were seen. There was one large herd of elephants which caused the infantry to scream with fright but when the cavalry fired their guns they moved away, the old ones pushing the young in front of them with their tusks. Near Mt. Hadra Russegger collected "birds with four wings" (? nightjars in breeding plumage.)

It was very hot. All day members of the corps were drenched with sweat. The vegetation was coming up with the onset of the rains. Dreary hills bloomed and dry places became a paradise. In places the ground was covered with sprouting seeds. The dried brooks were becoming full of water. At Lake Birka the drying papers were filled with plants collected, the best yield being from Carabus. Returning to El Obeid seemed almost like coming to a second home, but the climate pulled them down and all their joints were stiff. The journey had yielded 160 botanical species.

Now the rains were on in earnest and there were thunderstorms with flash upon flash of lightning. They left El Obeid again on the 7th of June. The whole prospect was changed since the journey thither. Everything was green though there were still but few flowers. Biting insects were very troublesome except when strong winds blew them away. Travelling east again there were many locusts about Jebel Mughnus and the camels trod upon masses at every step. Beyond Alwan on the way to Sakra they saw a herd of 2,000 nomad camels. Antelopes and Gazelle were seen in herds of 200.

Here the vegetation was more backward. They left 'Arashkol to one side and reached the Nile at Wad Shala'i and thence went back to Khartoum. Prince Puchler-Muskau arrived from Sennar. One member of the expedition named Mortsh became ill and died. Kotschy made a plan to return to the Savannah during the rains.

Kotschy parted from the director and took a boat up the White Nile to Gar en Nabi. After some difficulty in getting camels he went past Mangara, through dura-fields by way of Tur'a and Faki El Amin to 'Arashkol. His trouble was rewarded. Though he got an unfriendly reception from Kababish Arabs he was able to get a lot of work done at Tur'a. He procured a Nile boat to take him back to Khartoum but when he was nearly there a storm came up and damaged some of his collections.

In October, 1837 the expedition embarked in two boats on the Blue Nile and went first to Wad Medani and then to Sennar where it remained six weeks. Excursions were made to Sagadi and Moya. The gardens and situation of Sennar were lovely. Kotschy became ill with swollen feet and had to rest on an angareib ; and lay in a fever following exertion. The banks of the Blue Nile were a paradise. Village Dontai was full of boobabs and a place called Zumurka of other fine tropical trees. The path went through tall grass hung with Ipomoeas and other twiners. The region was full of guinea fowl and other beautiful birds were shot for the collections. Kotschy was not able to work on account of fever which troubled him for eight days after which he became somewhat better. They saw a herd of giraffe. Savannah forest became more open. On December 9th they reached Roseires. Kotschy was still ill but determined to continue the journey. He consulted a doctor of the Egyptian Army. Riding bound to a donkey tired him very much but the swelling of his feet was somewhat reduced by blood-letting. A lion was shot but could not be preserved. The vegetation became more dried up and there was very little worth collecting. To the west Mt. Tabi was seen and a long pointed mountain in the distance. Grass fires were seen running through the savannah. The grass was so tall that riders disappeared in it. The bank of the Bahr Azraq mounted steeply. Finally they arrived at the long-

awaited Khor Tumat which was a hundred paces wide and in which the vegetation represented higher zone flora.

Camp was made on the banks of the Nile. The king of Fazughli, named Mek Asusa, paid them a visit. An excursion from there revealed vegetation of astonishing variety. There were Ficus of many species, other trees and shrubs and twiners. The forest was impenetrable in places. Katschy was amazed at it. They found gold there. All thronged to it, each wished to seize it. There were gold-washings as in Nubalund. On January 7th some of the party climbed Jebel Fazughli but Kotschy nursed his swollen feet in the shade of a Boabab, and collected but little. Another day they travelled on with horses and mules. Kotschy could not enjoy the vegetation enough. The Bey-Commandant came and seeing Kotschy's pitiable condition wanted him to remain behind. However he got on a donkey and went along. The king was busy with his forces who were armed with shields, lances, and swords. On January 11th, Kotschy felt better but the going was very hard and the animals often stumbled. They passed Jebel Akaret. Kotschy saw beautiful ravines on its sides but was unable to visit and examine them on account of his swollen feet.

The military escort was a mosaic. "Alexander's host could hardly have shown a greater mixture of Nationalities." The collecting became still better. A big fruited tree (*Kigelia*) occurred there. They looked down on the mountains of Bani Shangul. The two sugarloaf shaped mountains in the distance were Obi and Redok. Since no embassy arrived from Abu Kuldschi fighting was to be expected. Weapons were kept in readiness and the camp put in battle order. Watch fires were set on the hills. The escort expecting an attack put on chain mail and were in higher spirits. The general was resolved to give battle in order to get provisions for the force. On January 15 they moved camp and went to Khor Tumat on the borders of Kamanil and Shangul. Rapid advance hindered much collecting but gold was found in gneiss. Bani Shangul was the first village and there a dura-field was seized and harvested. An embassy to the king was unsuccessful and a pitched battle began. The Sheikhs had shirts of chain mail and protectors made of cotton for their horses. The

villages of Ghabeish and Bani Shangul surrendered. The march continued. Everyone was excited and full of anticipation. Negroes appeared from every direction. Suddenly shots were fired. The negroes fought here and there courageously and did not fear small fire-arms but when cannon were fired they retired. Many soldiers were already dead, run through with lances. Bani Shangul was overcome and left in flames. Kotschy, still ill and weak, did not approve of such proceedings. It became apparent that the way beyond was impossible. Had the inhabitants come forward with offers of peace they could have gone further. Kotschy said to himself "Now the day is over"—the day of the expedition: but he consoled himself saying "we will not be the last Europeans to penetrate this region in the 19th century." The general agreed that it would be a mistake to go any further. The natives were aroused and could collect up to 10,000 people which would then mean the extinction of the expedition. Russeger agreed that it was impossible to proceed and they contented themselves with an excursion to Jebel Ghabeish under escort. This was carefully examined and plants were collected. It was "26 warm" and the latitude was 11 N.

On January 18th the return journey was begun. Kotschy provided himself with a weapon at one time when the press was great. He had grave doubts of the field ability of the general and thought his mishandling of things should be made known in Egypt. Some plants were collected and pressed under difficult and crowded conditions. Khor Belfodio was a vegetable paradise. Evidence of gold digging and iron-ore were gratifying but could only be examined in haste. The Tumat by now was a wild mountain stream. Kotschy wished he might spend some years there when military troubles with Fazughli were settled. He got another go of fever and at Khor Abu Kuldschi was unable to get to the nearest brooks where there were fish and insects to be collected. It was distressing to be so near good collecting and yet be unable to do any.

On January 26 they made camp on the Tumat. Kotschy still had fever. On February 3rd a party went out towards Fuznoghna. Here they got news of much gold. They estimated that a thousand

people would be needed to extract it. Kotschy hoped that if that happened some Europeans would come and make collections of plants and send them to Europe. Most of the armed escort now dispersed but some irregulars remained. They travelled by boats and passed Jebel Maba on February 14th. They often travelled at night on account of the heat. They reached Roseires again on February 20. The boats were loaded and the journey to Sennar and Khartoum continued. Kotschy found good collecting when he made a short cut overland accompanied by one 'Ali. They reached Khartoum April 1st and enjoyed magnificent melons. Kotschy put his collections in order and packed them. On April 6th they visited the Pasha. Kotschy's foot trouble and general health improved with rest. Intrigues were started. Each wished to be first in Cairo to make report and get credit. Kotschy thought "it is all one to me who gets the booty or becomes Bey. I shall stick to my own business."

Kotschy was grieved at the prospect of wasting a year taking his collections to Europe and wished someone would do it for him. Laskari showed him that kindness. They made the return journey the whole way up the Nile through Merowe Dongola. Kotschy would have no pleasanter journey his life through. Nile water was over everything. On July 1st they reached Wadi Halfa. From there he had a lazy life travelling by boat to Cairo and awaiting his collections there. At Alexandria the expedition broke up and all embarked on a gun-boat but Kotschy who remained behind. Kotschy wanted to take the opportunity to make a journey to Khartoum and beyond by himself. The necessary funds were obtained with the help of the Consul-General Laurin and Dr. Prunner. Kotschy took some months to get ready and set out again in January, 1839.

The journey went slowly with many halting places. He was delayed a long time at Aswan because the Viceroy was at Sennar and he was unable to get camels. He worked at Aswan collecting fish and some plants. In May he made the journey across the desert to Berber. There he had difficulty in getting his equipment through customs and there was a shortage of boats. With part of his equipment he travelled on rapidly to Khartoum accompanied by Khabir 'Abdullah.

He was soon on his way to Kordofan. As he was being ferried across to Omdurman a storm came up and some of his equipment was damaged. Beyond Khor Abu Chlef the inhabitants were suffering from tropical fever and in Farig 'Alaga from a pernicious bilious fever. Sour milk was drunk and no water to be had in many places. An attack of fever obliged him to stop for a while at Tur'a where he botanised within a radius of two miles. Then he reached 'Arashkol six days journey west of the Nile. The mountain of porphyry granite is 500 feet high. The savannah round about gave hardly 25 species. Here a mishap overtook him. His collections were increased by 133 species of which 70 were entirely new by October 28th. He left his camp and went to a Khor of Nymphaeas near by. A sudden storm came up, blew down his tent and the rain beat upon his collections consisting of 10,000 dried specimens. By later diligence he was able to retrieve a good share of them.

They moved from there towards 'Arashkol which they saw in the distance at evening but they only reached it at midnight. On October 31st they reached Sakerana and went on to Mount Kon which yielded seyenite and then on to a place called Gresch where they obtained green fodder for their camels. On November 16th they were at Uachle Kebir, on the 18th at Taiyara. Beyond they entered a valley in which there were Boababs and crossed the Kabatsch south of El Obeid. They went through Sofaya to Mulbas. On December 6 Jebel Turra was sighted.

Suddenly things took a gloomy turning. The consequences of the delay in getting his collections to Europe and their damage by moisture reached him at El Obeid and lack of confidence, malevolence and greed caused orders to be issued for his returning at once in the middle of his undertaking. The loan made him in Alexandria was not covered but the losses resulting from such bad management would be even greater. Not only had he spent much time and money on his journey but now he was forced to sell his outfit at a sacrifice and his ambitions to penetrate further into Africa must be relinquished. Later he consoled himself that had he been allowed to go on he might have met an untimely end there but a tinge of regret at his enforced return remained with him his whole life.

Kotschy continued to exercise care and diligence on his return journey. In great hardship and destitute of means he arrived in Khartoum, like a beggar, on March 4, 1840—he who up to then had always been comfortably well off. He complains most in his journal of Consul-General von Laurin and also of Europeans in Khartoum who, though friendly, withheld any material assistance. Also an appeal to Paul Wilhelm, Hertzog of Wurtemberg, did no good. The orders had to be obeyed. Parted from his collections Kotschy travelled through Aswan to Cairo and Alexandria where he arrived in August. Finally his collections caught up with him and he dispatched them to Esslingen and Vienna. “And what, we ask, had those people gained? They lost by their actions. Had they trusted Kotschy they would have done better.” Herr v. Dumreicher, a German, advanced him large sums in his distressed circumstances. “Let his name have honourable mention here.”

So ends Kotschy's African travels but perhaps a few words on his later life may be of some interest. Before returning to Austria he spent some years in Asia particularly in Persia and by selling the materials collected to various institutions and museums he was able to clear himself of all indebtedness to such people as von Dumreicher. He also made one more attempt to succeed as an evangelical theologian before he finally relinquished the idea. However, he had no scientific degrees nor the means to obtain any so had to be content for many years with a minor and poorly paid post assisting in a museum. He had to relinquish the idea of marrying and settling down on this account but never ceased to prosecute his scientific studies diligently and intelligently and prepared botanical papers on many subjects, his most ambitious work perhaps being a Flora of Mexico. Eventually his botanical abilities received recognition from fellow scientists and he even secured a well paid scientific post in Vienna some years before his death in June 1866. The volume from which these notes are taken was published after his death through the influence of another botanist, Dr. Schweinfurth. The plates of African plants drawn by Kotschy himself are unusually well and carefully executed.

THE ASCENT OF JEBEL KASSALA.

By R. A. Hodgkin.

The history of early attempts to climb Jebel Kassala is meagre. It is commonly related that a native once made an attempt to reach the top and obtain a leaf of the tree of eternal life. Having failed to get up the last section of the peak he is said to have attempted to shoot off one of the branches of the elusive tree with a gun or bow and arrow. He succeeded in hitting a branch, but it was blown from his grasp and according to some, he later lost his hold and was killed. The topography of the upper part of the mountain leads one to doubt some of the details of this legend, but it has not yet been proved that the trees at the top have not some miraculous powers.

The Italians during their occupation of Kassala from 1894-6 certainly made an attempt on the mountain. Here again details are not available of their route or of the measure of their success. It is however certain that they did not reach the summit. Since then various adventurous officials have made tentative ascents of the lower slopes, but usually returned with discouraging reports of extremely smooth slabs or of dark gullies barred by overhanging boulders.

The mountain itself stands 2800 ft. above the town of Kassala, from which it is only two or three miles distant. The first 800 ft. consist of fairly gradual slopes, strewn with boulders and large scree interspersed with bushes. Above this level, the rocks are, in general, bare smooth slabs of the "boiler-plate" variety. That is to say, they are never absolutely flat but bulge outwards or curve in towards dark gullies and chimneys. There is hardly a sharp corner or jagged peak anywhere on the whole profile of the Jebel; everywhere the basic geometrical figure is the parabola. This roundness of the mountain has been brought about by that type of desert erosion known as "exfoliation" which consists of the gradual peeling off of those parts of a mountain which are most affected by temperature changes. As the surface of the peak, and particularly those parts which project, will be thus steadily eroded, the tendency is for spherical rock forms to develop. This gives rise to a rock formation which made the ascent

possible. Where a layer of rock is in process of peeling off, one sometimes finds the old "skin" lying against the main body of the mountain in the form of a series of huge slabs piled one on top of the other like a pile of flat child's bricks leaning against a wall. It was one such formation which provided the key to the ascent.

A hasty examination of the western side of the Jebel in 1939 and Mr. D. Newbold's description of the eastern side viewed from the air, suggested that a route was more likely to be found to the east than to the west, despite the deceptively promising line of approach visible from Kassala. L. W. Brown and I therefore spent the morning of the 21st of December in reconnoitering the eastern approaches. From almost any side the problem of the climb is a double one: how to get up the steep walls which rise for over a thousand feet out of the boulder slopes, and how to climb the smooth dome which curves up some 900 ft. further. Between the two is a tree-covered terrace which was obviously the first objective and which we called the Hanging Garden. There seemed to be two possible ways of reaching this, either by a very black and awesome-looking gully or by the pile of broken slabs to which I have already referred. It was also obvious that we would do best to sleep out at the foot of the steep rocks so as to have as much time as possible for climbing in the fairly cool morning air.

In the afternoon of the following day we motored out along the Sabdarat road from Kassala and left the car near the middle of the eastern foot of the Jebel, about half a mile beyond a small village. With one Sudanese servant and a demobilised Abyssinian to help carry our bivouac and water supply we started up the boulder-strewn eastern slope. About 700 ft. up we reached a small *maidan* at whose northern edge a set of boiler-plate slabs slope up at a fairly easy angle. One can walk up these almost without using the hands and so we all went up to the top where we dumped the bivouac amongst some large boulders. There was plenty of firewood and if ample supplies of water and food are brought, this terrace makes an admirable camp site.

We left camp at 5.45 next morning (December 23rd) as soon as it was light. Future expeditions would however be well advised to start half an hour earlier, in the darkness. After a slight descent

- SKETCH OF JEBEL KASSALA

Air View from the East.



from the bivouac platform we started to climb through thick bushes which led to further fairly easy boiler-plate slabs. In half an hour we reached the foot of the really steep slabs where serious climbing began. We roped together and started to climb the series of detached blocks already referred to. The climbing for the next 300 ft. was delightful and we made rapid if energetic progress up the rough granite. Then we came to the first major difficulty. The uppermost of these detached slabs was a huge thing whose area must have been nearly half an acre. It was not broken by cracks like those up which we had come. The only possibility was to make use of one of the thin cracks which marked its contact with the main body of the mountain. The right hand crack was visible but appeared to be quite impossible because of an overhang half way up. The other crack was still invisible to the left. We edged along beneath the block to its left hand bottom corner. I made a considerable effort to get up the first twenty feet of the crack but had to come back defeated and out of breath. As this bottom left corner was, as it were, cracking away from the main slab, there was another oblique crack leading up to the point I had failed to reach in my first attempt. The entry to this little crack was up a tree which looked promising. The tree and the crack itself provided solid holds, so we hauled ourselves up hand over hand and climbed to a little terrace which my first effort had failed to attain.

The next section of the climb was the most difficult. We were now on the smooth rocks of the body of the mountain with the edge of the great detached slab forming a right-angle and in the angle was the crack. Thirty feet above us a small tree sprouted out of the crack but below it there were none but the very slightest holds on the rock. At first we could not even get started on the smooth incline which confronted us but by climbing first onto Brown's head and then using his outstretched hands as foot holds I managed to reach a few slight wrinkles of rock. Some delicate spread-eagled climbing then led to the comfort of the tree.

Then followed a severe thirty foot pitch round a slight overhang. Having shinned up the crack for about fifteen feet I began to feel uncomfortably aware of the exposure and drove a small iron spike

into a narrow crack. We had brought four of these spikes or "pitons" in anticipation of some such unprotected and exposed place. With this firm belay a few feet lower I felt safe to wriggle over the right hand bounding wall of the corner and get up onto the back of the main slab. Here we inserted another piton to serve as a belay. The next fifty feet to the top of the main slab were at an easier angle and we scrambled up to its top edge without further trouble. From here we walked under some huge overhanging boulders upwards into the Hanging Garden.

As we jumped over the large boulders and pushed our way through the trees of the garden we kept looking up to the final dome to see what it offered in the way of a route. The most prominent features on it are two clefts whose lips curve out to blend into the general roundness. They run upwards parallel to each other, the right hand one being smaller and higher; both however peter out below the easy rocks of the top. From immediately below, all the final slopes look deceptively easy and it was not till we started climbing up towards the big cleft that we realised how steep they were. By means of a few grassy grooves and numerous finger-tip ledges we climbed fairly rapidly into the cleft. About three hundred feet up it became too steep so we sidled to the right and got into the smaller cleft. This took us about a hundred feet higher to a small round hole in the rock which we called the Robin's Nest. With one man belayed securely in the nest, we made some determined efforts to climb up the rocks to the left. They seemed to lead almost directly to the easier angle of the upper dome, but there was an unclimbable space of about twenty feet which defeated every attempt we made. We gave up very unwillingly as it seemed that we, like the man in the legend, were to have success snatched from us at the last minute.

There still appeared to be another possibility even further to the right where the rocks were slightly broken. So we continued our crab-like traverse which eventually took us nearly a quarter of the way round the Jebel from the first cleft. The final crux of the climb was an extremely delicate bit, about seventy feet long, leading upwards to a detached block which lay like a reclining tomb-stone. All

the climbing here was on the toes and finger tips. The exposure was extreme for we had come far enough to look straight down to Kassala. Half way up there was a seemingly vital hold in the form of a small decaying flake of rock which vibrated uncomfortably when any weight was put onto it. However we both reached the tomb stone safely and skipped fairly quickly up the last few hundred feet of easy rock towards the summit which we reached at 9.30 a.m. The dome is so big that the highest part in the centre seems to be almost flat. There were a few loose flakes of stone lying about which we built into a pointed cairn. Then we started to walk round the edge where the angle was not too steep. The dome is cut from east to west by a gash, in which numerous trees are growing. One of the largest and most conspicuous of these was a fig which we decided must be the tree of life. We self-consciously munched a bit of leaf and stuffed some into our pockets as presents for our porters. On the circuit round the top we looked down for other possible routes but no alternative was visible.

Even our own route looked uninviting enough as we started down the rapidly steepening rock in the direction of the gravestone. Descending these steep slabs is perhaps easier than ascending them, as by facing outwards, it is possible to make use of one's bottom as an additional source of friction. The feeling of exposure, however, is increased. Owing to the convex nature of the dome, the rock horizon always appears close to one's feet and then one sees the distant tracks and buildings of Kassala nearly 3000 ft. down. The crucial passage was safely passed and we made a fairly rapid descent of the dome. We had a short rest on the hanging garden but as the rocks were getting uncomfortably hot we decided to hurry down. We were able to descend the severe passages by taking off our rope, doubling it round a piton and sliding down, later pulling it down by tugging at one end. At the last severe pitch where the great slab drops to the more broken rocks below, I fell into, and through, the tree which had originally given us access to the slab. I don't quite know what caused me to fall but it was probably my failure to test a brittle hand-hold properly before using it. We were both tired and extremely hot and thirsty

and this probably contributed to the accident which though not serious proved later to have broken my wrist.

The rest of the descent passed off without incident. The broken blocks were harder than on the ascent because we could not touch them with bare hands owing to their great heat. We reached the cache we had left at the bottom and revived ourselves with some luke-warm water and then scrambled down to our bivouac where we met the two porters, and all walked down to the car together.

Judged as a rock climb, the ascent of Jebel Kassala is of a high standard. The several difficult pitches would in England be classed as "severe" or if the extreme exposure were taken into consideration they might be "very severe." That is to say the climb should not be attempted by a party containing beginners or without a leader of considerable rock climbing experience. Given these conditions, however, there is no reason why the Jebel should not be climbed often. It certainly deserves climbing, for it must be one of the finest rock climbs in Africa.

Note for future expeditions. A new route to the Hanging Garden could probably be made up the great gully which lies to the left of our slabs, immediately below the centre of the peak. This would be less exposed than our route but would probably be rendered unpleasant by thorn bushes which appear to choke its recesses. A good hundred foot rope should be taken. The pitons at the severe pitch on the slabs should remain *in situ* for years, but should be tested before being used. Crepe rubber boots are the best footwear. Knees and elbows should be covered by closely woven material which will not catch. The extra weight of a small water flask would be well justified. At least six hours should be allowed for the climb and return to the bivouac.

THE DINKA OATH ON ASHES.

By J. E. C. Mackrell.

In a recent homicide case in which a Dinka and an Arab were the accused, and in which there were both Dinka and Arab witnesses, the Dinka oath on ashes was used for swearing certain of the Dinka witnesses at a stage of the Magisterial Enquiry.

When the Magisterial Enquiry was first begun, the Dinka witnesses had been warned to speak the truth. There was then such a conflict in the evidence, that it was clear that much of it must be false. The decision was therefore taken, to re-examine the principal Dinka witnesses on oath, and also to recall certain of the Arab witnesses for re-examination when considered necessary. The cases against the two accused, each rested mainly on the evidence of a single witness. These two Dinka women told completely contradicting stories, one saying that she had seen the Dinka accused strike the fatal blow, the other that she had seen the Arab accused do so.

At the re-examination these witnesses were severely admonished by an important Dinka chief before they made their statements for the second time. They were also on several occasions during the proceedings reminded by him of the ghostly peril in which they would presently stand if, having lied now, later they drank the ashes as they would be required to do. In spite of these warnings neither woman was shaken from her original story. The witnesses were then led out to an open space on the river bank for the ceremony of the swearing. Six well-known chiefs of the fishing spear had been called in from Chief Lorya Majok's country for the occasion. A large number of onlookers were present, many of them persons concerned in the case and their relatives. The Chiefs began by circling slowly round the witnesses chanting a prayer. This was followed by each chief delivering a menacing exhortation to the witnesses to speak the truth. They then proceeded one by one to question the women on the main points of their evidence, urging them from time to time to withdraw any untrue statement while there was yet time.

When this examination was concluded, one of their number began the preparation of the ashes, while the other old men again circled round the women, calling on God to reveal the truth. The ashes consisted of sacred cow dung, burnt and powdered, and mixed with the dried leaves of certain plants and with blood drawn from the ear of a dog. River water was added to this. The ashes being ready, the chiefs ranged themselves before the witnesses holding their spears aloft. The women, by now in a very excited condition, then drank the potion from a large calabash, between the draughts crying out the main points of the evidence. The mother of the Dinka deceased in the case stood nearby, calling down curses on the head of her who would shield her son's murderer. When the ashes had been drunk, the father of the Dinka accused ran forward and sprinkled both the women with some potent ashes of his own, obtained from the Malwal country. The ceremony was concluded by the witnesses trampling the calabash under foot, and crying out that even as this vessel was now broken, so would their bodies be broken if they had not spoken the truth. The Chief then directed that the women should be kept in a place apart for three or four days under observation, while the ashes did their work.

It will be seen that this form of oath differs in many respects from that employed in European Courts of Law. Here the evidence was first given, and the witness was then subjected to an ordeal, in order to determine whether she had spoken the truth. There is no doubt that the Dinkas present expected more or less instant retribution to overtake one of these women. It may be said that the European also believes that the wrath of God will fall on a witness, who gives false evidence after swearing on the Bible. The difference is that the European is prepared for the retribution to be long delayed in action, and in fact expects the wicked to flourish like a green bay tree in the meanwhile. It is not expected of the oath, as it is of the Dinka oath, that it will by its consequence decide the case while it is still before the court. The Christian oath taken before giving evidence, is much more like the Dinka affirmation that he will speak the truth when making its statement. This affirmation is the only sort of oath nor-

mally asked of a Dinka witness when appearing before a Government court. He is cautioned to speak the truth, and required to affirm that he will do so. To drink the ashes first and then make a statement, would not be possible according to the Dinka way of thinking. In this connection it is also well known that most Arabs, while they will swear afterwards to any particular point in their evidence, dislike and do not properly understand the European custom of swearing in advance in Government Courts that everything they say will be true. It would also not be considered proper by Dinkas to employ the ashes to test truth of other than important points of evidence. Nor can the swearing on ashes be performed on the spur of the moment, or in camera. It is looked on as a ceremony to be performed publicly, in which the whole family of the swearer is concerned. The influence of the family usually further powerfully inclines the swearer towards telling the truth.

In the case under consideration, admonitions having failed, the hope was entertained that recognition of the danger to which they were about to be exposed, would make the women withdraw any lying evidence which they had previously given. This hope was not at the time justified, as both women clung to their stories, the one contradicting the other. While, therefore, the threat of the ashes might have proved, but did not prove, helpful, their actual employment was likely to prove embarrassing. A serious offence had been committed, and it might be expected that the case would go for trial by Major Court. If after drinking the ashes, one of the women had vomited and fainted, or if one of them were to have a miscarriage during the next month or two, or if the little sister of one of them in a cattle camp fifty miles away were to have been bitten by a snake, the case would, to all intents and purposes, have been decided in Dinka eyes. Even a negative result would presumably have carried its meaning to Dinkas; that the evidence of both women was in the main true. Yet a further possibility remained, namely that one of the two witnesses would endeavour to free herself from the consequences of the oath, by having recourse to the ministrations of another chief of the spear. This is, in fact, what happened in the case in question. One of the witnesses

took such action and thereby in Dinka eyes admitted the falseness of her evidence. Such a development could have decided the case, had a Chief's Court been trying the case by ordeal. It occurred, however, in the middle of a case tried by a Government Court, deciding the case according to the rules of evidence laid down in the Code of Criminal Procedure. It is true that the court was helped thereby, to some extent, in its task of sifting the evidence, but it could not of course be influenced by the embarrassing popular assumption that the result of the ordeal had decided the issue.

In the light of the experience gained in this case, it seems advisable that the practice of merely warning Dinka witnesses to speak the truth in State trials, should be continued, and the oath on ashes not be employed, as the ordeal cannot there be allowed to decide the case.

THE ORDEAL BY BOILING WATER.

By Capt. J. M. Stubbs.

The ordeal by boiling water is practised either openly or surreptitiously by all tribes of the Shilluk family living in Bahr el Ghazal area as well as some neighbouring Dinka tribes who adopted this custom some three generations back, when inter-marriage between Dinka and Jur became common. It is used chiefly for settling accusations of magic in which normal or material evidence is not obtainable. Within the last twenty years the principals in the dispute submitted themselves personally to the ordeal but now this is rarely done and professionals take their place.

The following is typical of what happens:—

A accuses B of causing death by means of magic. B denies the charge and both parties agree to abide by the boiling water test. B obtains a professional, whose fee is one bull, and arranges for the test to take place in the presence of a Jur religious leader. On the appointed day both parties, their chief, the professional "dipper" and the religious leader retire to a lonely part of the neighbouring forest where a twelve inch *burma*, full to the brim of water, has been brought to the boil. B starts the ceremony by calling on God to prove his innocence by protecting the hands of "dipper." Then the accuser says his bit which is generally a long winded prayer to the opposite effect. Lastly comes the religious leader who offers up prayers to God that he will show the truth in this case by protecting the hands of the "dipper" if B is innocent, or by allowing them to skin if his patron is guilty of magic.

The dipper then has to earn his bull. He first washes his hands before all the parties and then dips each hand three times, wrist deep, into the boiling water. After the ordeal he has to allow his hands to dry in the air and is then taken away by the religious leader who keeps him in seclusion for 5 days after which he is brought before the Court

and his hands examined. If they show signs of skinning A has proved his case and B must pay compensation for the wrong done. If the hands are healthy B is innocent and must be paid a bow by A for bringing a false accusation. In either case the "dipper" gets his fee.

For many years I thought there must be some trickery attached to this practice but I am now convinced that this is not the case.

A FEW CURES FOR SNAKE-BITE.

By T. R. H. Owen.

In July, 1941 I was on trek among the Tegali hills east of Rashad and at the village of a certain omda, Hassan El Zein, of the Kawahla Arabs. After a busy day we went out for recreation to hunt guinea fowl. We were returning shortly before sunset, and were only two hundred yards from the village on some gravelly soil when the omda dropped one of the guinea fowl, gave a hop and exclaimed "A snake bit me!" Looking down I saw the snake wriggle off into a bush and there was a bite, exuding blood, on the inside of the omda's left ankle.

We hurried into the village and I made the usual incision, squeezed blood, cauterized the wound, and clapped on a tourniquet. This done the omda was handed over to his relatives and sympathizers for further treatment.

Firstly there was a request for *limuns*. Luckily I had some *limuns*, which were cut up and given him to suck, as to a football team at half-time.

Secondly a hole was dug in the ground, the victim sat beside it and the afflicted leg was placed in the hole, the earth shovelled in round it and rammed well down; and so it was left for about ten minutes. This was "to prevent the poison rising up the leg."

Thirdly a jorum of *semn* was produced, at least a teacupful, and was drunk down at a gulp. The patient seemed to like this.

Fourthly some roots of the *sumeima*, also known as *shagar el morfa'in*, a species of caper and not uncommon on gravelly soil, were crushed up and pounded to a pulp and administered mixed with a little water. This was less well received.

Fifthly the whites of four hens' eggs were brought in a bowl and taken neat.

Sixthly a chunk of *khartit* or rhinoceros horn was produced. In the interest of game preservation I inquired as to its origin and learned, as expected, that it was a precious family heirloom, being no longer

obtainable on the market. This was the *pièce de resistance*, the undoubted cure. A very small piece was carefully filed off into a cup, about two tablespoonfuls of milk added, the mixture well stirred and the dose drunk off.

Seventhly a fiki was called in to make a *mihaya*. He had been sitting all this while in a corner writing on the usual large wooden board the verses of the Koran prescribed for snakebite (ان الله يمك السماوات والارض). This writing is done with a quill pen in copious sepia ink of a thick consistency. It must take nearly a small coffee-cupful of ink to cover the board. This ink was then washed off into a bowl with a little water in it, stirred, and the potion drunk off.

Eighthly and lastly the women came and demanded the corpse of the snake. I led back a party, in the dusk, and as luck would have it we found him still in the bush where he had taken refuge and from which he had never budged. He was killed and proved to be a fifteen inch *washshasha* or saw-scaled viper (*Echis carinatus*) probably the commonest and most widely distributed poisonous snake in the country and not infrequently fatal. It was given, on the end of a stick, to the women, who wrapped it carefully in cowdung, baked it at the fire and buried it outside the village. The object was "to keep the patient's leg cool": had the snake been left out in the sun next day, the leg would become hot and inflamed.

It was now dark. The leg was swollen and very painful but the omda in good heart though apprehensive, as his uncle and one of his father's wives had both been killed by snakebite, the latter by a *washshasha*. I was assured that if he succeeded in being sick all would be well. On thinking of the eggs, the semn, the roots, the rhino horn and the ink, there seemed a good chance therefore of recovery. Nor was hope disappointed. After much pain the patient was gloriously sick at midnight, got a little sleep thereafter and next day was out of danger. Full recovery took nearly three weeks.

The only disappointing thing is that it is difficult for medical science to determine which of the various condiments and sympathetic magics saved him.

A DINKA PUBLIC HEALTH MEASURE.

By Norman Nunn.

This ceremony, carried out annually among the Northern Dinka, is for the purpose of bringing an end to the people's sicknesses. These observations were made early in November at Banjang in the Upper Nile Province. I asked to be allowed to witness the proceedings, and at about 7 a.m., the rain-maker himself came to call me—a sufficient token that I would not be an unwelcome intruder. The people, young and old, from the two villages nearest to our station were making their way to the river. Each carried a cob of dura, and some had short pieces of dura stalk in their hands which represented absent members of their families, some being too sick to attend, others being ten miles or so away with the cattle, sheep and goats, while others had less excuse for their absence. Possibly these last were sceptical about the efficacy of the rite, but no doubt all of them had near relatives interested enough in their welfare to see that they were represented by a piece of dura stalk.

Arriving at the river bank I found the people sitting in a roughly semi-circular formation a few yards from the water's edge. The rain-maker, who had gone on ahead of me, was standing in the middle of the group holding a green, newly-opened gourd in his hand. As each fresh batch of people arrived they went up to him and spat into the gourd adding also a little offering of a few grains of dura or a few drops of native beer. It was amusing to watch the efforts of parents urging or coaxing the smaller children, overawed by the occasion, to make their contribution to the gourd. Where these efforts failed and where the children were altogether too young to comply, the rain-maker passed the gourd across the child's back, evidently an alternative means of securing the benefits of the ceremony on his behalf. When all had contributed to the gourd in this way the rain-maker, with several elder men and women standing on either side of him, faced the river while the others continued sitting as before. The whole company then began chanting a kind of chorus, at the same time holding their hands out in front of them with upturned palms,

making motions towards the river as though consigning something (presumably their sicknesses) to its waters.

After several minutes of this, the rain-maker rushed into the river and, with the gourd still in his hands, plunged completely under the water, remaining submerged for a few seconds. His dash for the water was the signal for the others to follow him, and young and old plunged in with such eagerness as to leave the impression that the sooner they immersed themselves after the rain-maker and gourd the more efficacious would the ceremony be on their behalf. Babies in arms, in spite of their loud protests, had water dashed over them by their mothers and fathers. All had divested themselves of their clothing save the married women, who retained their sheepskin aprons.

I lost sight of the gourd, but it would be consistent with other Dinka ceremonies at the riverside to assume that the rain-maker tucked it away under the reeds. The little sticks representing absentee relations were immersed in the river by those who had brought them and carefully taken back to the villages. By certain passes of the hand between the sticks and those they represented, identification would later be established between the two, and the benefits of the ceremony accrue to those who had not attended it in person.

Everyone was also careful to obtain the root of a reed from the river. This was tied around the neck to form a kind of necklace. It was to be worn until the next day when it would be discarded. Roots of these reeds were also taken back to the villages for absentees.

The natives say that this ceremony was to put an end to the many sicknesses, particularly malaria, which were prevalent at the time. The rains having ended a month or more before, it would naturally follow in the ordinary course of events that the incidence of malaria would soon begin to decline, thus lending support to their belief. I may add that people on their way home the same day seemed to feel no inconsistency in coming to us for medicine just as they had done the day before, and I suppose there is no one in the whole community who turns to us more quickly for help in case of sickness or accident in his family than the old rain-maker himself who acted as high priest that day.

THE DESTRUCTION OF MOSQUITO LARVAE BY TERRAPINS.

By D. J. Lewis.

In the course of a mosquito survey during the yellow fever epidemic of 1940 in the Nuba Mountains I examined a number of domestic water jars. At Umm Dorein and Kororak, two villages of the Moro tribe not far from Talodi, about 25 per cent. of the jars were found to contain small terrapins or water-tortoises¹ usually one but sometimes two to a jar. No terrapins were found in jars in other parts of the Nuba Mountains and the custom of keeping them appears to be confined to the Moro tribe. According to the people it existed before the time of the present generation.

No mosquito larvae were found in jars containing terrapins although in several of the jars without these animals larvae of *Aedes aegypti* were seen. If the terrapins are kept in a tank and given mosquito larvae they eat them readily and destroy scores in a few minutes.

Whatever is the reason for the custom of keeping terrapins it can be said that for at least 50 years and probably for centuries many of the Moro Nubas have practised a form of biological control of *Aedes aegypti*, one of the potential mosquito vectors of yellow fever.

It may be of interest to record that Umm Dorein and Kororak were among the few villages where *A. aegypti* was common in the dry season (November). The reason was that the Moros construct unusually large earthenware jars and store water in them for a long time. These two villages are near the area where the epidemic of yellow fever is thought to have started.

1. I am grateful to Dr. V. FitzSimons for the identification of these terrapins as *Pelamedusa galeata* Schoepff.—D.J.L.

REVIEWS.

HISTOIRE DU REGNE DU KHEDIVE ISMAIL.

By G. DOUIN.

VOL. III. L'EMPIRE AFRICAINE 3^{me} PARTIE (1874-76).

In two volumes (1317 pages) published by the Royal Geographic Society of Egypt.
PRICE P.T. 180.

These two volumes cover the period of Egypt's greatest expansion and the reverses which were to lead to her collapse. The real ability of the Khedive himself, the ambition of the Governor-General Ismail Ayoub Pasha and the energy of the three remarkable frontier governors, Gordon, Zubeir and Munzinger, combined in 1874-5 to carry Egyptian arms to successes whose brilliance obscured their instability and gave rise to extravagant dreams of an empire extending from the Indian Ocean to Lake Chad. The reasons for the swift disintegration of this empire are only too apparent in the account of its construction. Poor communications and the mutual jealousy of local governors held up vital supplies and reinforcements for months on end; ignorance of elementary hygiene caused heavy mortality amongst all but the toughest of black troops; the dearth of able men forced the government to use many whose loyalty was doubtful or whose past records were dark with cruelty or misdemeanour,¹ and the drain on the exchequer forced the troops to live off the country and so counteracted all the Khedive's efforts to win or retain the goodwill of subject peoples. That Ismail was genuine in his desire to suppress the slave trade is clear enough from his correspondence, but the fact that the invasion of Darfur was engineered by Zubeir for the precise purpose of avoiding Gordon's bottleneck at the mouth of the Sobat is an ironic commentary on his chances of success. Nor was the

1. This fact is apt to be overlooked by those who complain of the apparent inconsistencies in Gordon's attitude to Abu Seoud, Raouf Pasha and others, including Zubeir. However much one disapproved of a man's character situations were continually arising in which a strong sinner was preferable to an otherwise blameless nonentity. Instances abound in the administrative experience of the last forty years where the dismissal of a strong but unscrupulous sheikh has led to the rapid deterioration of public security in his area.

fighting quality of the army high. The conquest of Darfur was made possible only by the skill and prestige of Zubeir and his private army of seasoned slavers ; Gordon's drive south was held up as soon as he came into contact with the Kingdoms of Unyoro and Uganda ; the disasters of Arendup, Munzinger and Ratib Pasha against King John of Abyssinia demonstrated clearly the propensity of the troops to panic and the lack of co-ordination and mutual trust amongst the officers, weaknesses which were later to throw away the Empire of the Sudan in one night on the island of Aba.

The first 350 pages of the latest part of M. Douin's monumental work deal with Colonel Gordon's term as Governor of Equatoria, and provide an invaluable mine of reference for any student of the history of what are now the Uganda Protectorate and the Equatoria Province of the Sudan. Gordon's main concern was first to stamp out the slave traffic on the White Nile and then as a substitute source of revenue to divert to Egypt the trade in ivory and cotton from the great lakes which had hitherto flowed south and east to the Indian Ocean. This involved him in a contest for spheres of influence between Egypt and Zanzibar, where a compatriot in Dr. Kirke the British Consul General was jealously guarding the interest of the Sultan, with which were identified to a certain extent the interests of the British Government. So we get the anomaly of the American newspaper correspondent Stanley pushing the claims of England and of the Christian missions at the court of King Mtesa while the militant Christian Gordon was supporting those of Egypt and Islam. When so many of his agents were subordinating the Khedive's interests to their own it is refreshing to find Gordon's sense of duty to his master leading him into denunciation of his own country's policy. There can be no doubt that Ismail fully appreciated this, and in return placed greater confidence in Gordon than in any other of his subordinates. His letters show a shrewd appreciation of the Colonel's character and it is clear that for Gordon he was a much more congenial chief than Lord Cromer. M. Douin's own sketch of Gordon's character is able and fair.

The story of Gordon's difficulties and set-backs at Gondokoro and Lado, of his gradual advance southwards towards Lake Victoria

and of his dreams of a landing at Mombasa, is less unfamiliar than other parts of M. Douin's story because Stanley and Chaille Long, Emin Pasha and Gordon himself have created and provoked a considerable body of literature, but here at last is the official history of those troubled years, edited with impartiality and scholarship, with a wealth of detail and maps and much new information. It should be in the possession of every administrative officer in Uganda and the southern Sudan.

The problem of the arrangement of the southern provinces had already arisen. Gordon's dominion extended north to the Sobat Mouth but there was a project for the creation of a separate Upper Nile province out of the floating districts above Fashoda which have since changed hands so often. Gordon for some time considered that his administration was incomplete without the Bahr El Ghazal. Certainly there was little hope of suppressing the slave trade so long as Zubeir was esconced with his lieutenants west of the Jur river. Zubeir had established a new trade route overland to El Obeid as early as 1866 by agreement with the Rizeigat, and it was a breach of faith by these latter which gave him the pretext for the occupation of Shakka. Here he made the capital of the Bahr El Ghazal province, so uniting for the first and last time the Dinka and the Rizeigat under one administration. The Rizeigat were at this time under two "sultans," Alyan and "Monzel" who fled to Fasher while the bulk of the tribe under Madibbo Ali submitted to Zubeir.* The sultan Ibrahim's refusal to return the fugitives and his subsequent attack on a party of Egyptian troops gave the Khedive his excuse for a declaration of war and Zubeir made short work of the Fur armies. He was in a fair way to add the conquest of Borku when he was recalled to Darfur. There can be little doubt that he would have been as successful in the west as his lieutenant Rabih a decade later but there was ground for Ayoub Pasha's fear that he might set himself up as an independent sultan in central Africa.

2. Alyan and Munzal belonged to the Awlad Umm Sellama section of the Rizeigat, which at that time preponderated. Madibbo was of the Awlad Mohammed and his family has retained the headship of the tribe ever since save for a brief period during Gordon's Governorate General when Munzal was restored to power.

The account of the conquest of Darfur and the subsequent friction between Ayoub and Zubeir is followed by a chapter on the Prout - Purdy surveys of Kordofan and Darfur. M. Douin's failure to trace Purdy's lost report on Darfur in the Abdin archives must unhappily be regarded as terminating all but the most slender hope of its recovery. Here again however is a mass of information for the student.

The common contemporary misspelling of the name of the Hamar tribe is reflected in the text. They appear as "Homr" at Umm Shanga in 1874 under Ahmed El Mileih, (who joined Ayoub Pasha after intercepting Zubeir's despatch announcing his victories at Dara)—and again at Foga whither the capital of Eastern Darfur was moved from Umm Shanga in 1876. They even appear as *Baggara* El Homr in Messedaglia's map of Darfur, though Ayoub Pasha is quoted (p. 536) as describing them as being "as bad as the Baggara." Purdy however spelt the name correctly when he met them at Umm Badir in 1875. Ahmed El Mileih was dead by then and his young brother Ibrahim, a boy of 15, led the tribe. The real Baggara El Homr do not appear to have been differentiated at this time by the authorities at El Obeid from the rest of the Messiria. In the year 1876 a section of the Messiria, presumably the Zurg, emigrated from the neighbourhood of Shakka to avoid the oppressions of the Governor of the Bahr El Ghazal. As the governor was unable to substantiate his complaints against them the Khedive authorised them to remain in "the region of El Adik"³ in the province of Kordofan.

With his eighth chapter M. Douin turns to the Egyptian expansion in the gulf of Aden which caused the first overt clash with British interests. The Government of India, whose position at Aden was maintained against the opposition of the Turks, viewed with concern the occupation of Berbera in 1873 by a power which was still regarded as part and parcel of the Ottoman Empire. In spite however of friction arising out of the closing of the Somali port of Bulhar, whence Aden drew the bulk of its rations, the British Government decided not to

3. "El Adik" is unidentifiable as a name but the real reason for the Zurg move was the oppression of Subahi, Zubeir's lieutenant; this would explain why the Governor was unable to substantiate his complaints. (S.N. and R. Vol. XXII Part I pages 67-8).

interfere and welcomed rather than disapproved of the transfer to Khedivial control of the Turkish ports of Zeila and Tajurrah. The Khedive's ambitions did not however stop there. He regarded Zeila as a stepping stone to Harrar, and Tajurrah as the key to Aussa. Aussa was to prove the grave of Munzinger but Harrar was occupied without difficulty and from it the Khedivial eyes were turned south to Mombasa, west to the upper Juba river and the great lakes and north to the Blue Nile and Fazoghli. The first of these projected expeditions was the easiest to execute but it was also the best calculated to embroil the Egyptians with the British Government.

At this time the Sultan of Zanzibar, connected by close and recent treaty with Britain and watched over by the zealous Dr. Kirke, maintained garrisons in the coastal towns from Cape Delgado north to Mogadishu, but there was some doubt as to his title to the coast north of Lamo, where his Arab governors were paying tribute to the Somali Chief Ahmed Yusef. The Viceroy therefore concluded that the Sultan's claims were no more valid than his own as ruler of Berbera and Harrar and sent an expedition under a retired British naval officer called McKillop to occupy the coastal towns as far as Kismayu. Infiltration tactics were to be employed and any open clash avoided as far as possible, not only to prevent trouble with Britain but because Khedive and Sultan were ostensibly on the friendliest terms and the latter had recently been entertained in Cairo where he had discussed openly his plans for the more effective occupation of the Benadir coast. McKillop carried out his instructions successfully, occupying Kismayu on October 16th and Brava on October 26th, 1875, but conflict was narrowly averted on more than one occasion, notably when Dr. Kirke arrived off Brava in an English frigate. The British Government were thus enabled to affect to regard the whole expedition as being due to a misunderstanding and although in face of their treaty obligations to the Sultan they had to insist upon its withdrawal⁴ they were still prepared at this stage to recognise the Egyptian occupation of Berbera and to support a proposal for the renting by Egypt of a

4. There was also a popular outcry in England. The Sultan had recently paid a state visit which caught the popular imagination much as Ras Taffari's did in later years.

Somali coast harbour in order to open a line of communication to Gordon in Equatoria. The interception by Dr. Kirke of a letter from McKillop to Gordon mentioning Khedivial designs on Mombasa and his consequent reconnaissance to Formosa harbour lent weight however to the Doctor's protests that the near approach of a representative of the Caliph of Islam had thrown the whole Moslem coast into a turmoil. The scheme for a treaty port was dropped and in any case Gordon had already dismissed the line of communication project as impracticable, finding that he had considerably underestimated the distances involved.

The story of the McKillop expedition is followed by a 300 page account of the war between Ismail and King John of Abyssinia. Taking up the tale where he left it in Part II M. Douin describes how the infiltration tactics later employed so successfully by the Italians led after some initial success to the disasters of 1875 at Gondet and Aussa and later to the failure of the punitive expedition of '76. It will be for Mr. D. C. Cumming to use this material when he continues the History of Kassala and the Province of Taka of which seven chapters have so far appeared in this journal. It is noteworthy that in spite of vehement exhortations from Paris the British Government again refused to intervene, contenting itself with a warning to the Khedive that if he attempted to turn the punitive expedition into an army of invasion he might find that he had bitten off more than Egypt could chew.

There seems little doubt that the predominantly Moslem inhabitants of what is now Eritrea were ready to welcome the Egyptian power, but it is strange to find the Lazarite missionaries (to whom John had refused concessions) furnishing the invaders with valuable topographical and general information and with contacts with dissaffected feudal chiefs. A similar role was filled by their Italian successors in the nineteen thirties.

The contemporary maps and sketches reproduced are sometimes a little confusing as they do not include all the place names mentioned in the text. The officers of the Abyssinian expedition shared with Colonel Gordon a propensity for drawing their maps upside down which is rather disconcerting to the modern eye. With the loss of

the Hamasein Province and the withdrawal of the Egyptian troops to Massawa and Keren M. Douin concludes his account of an expedition which by impoverishing the exchequer, breaking the morale of the army and lowering the Khedivial prestige paved the way for the mutiny of Arabi Pasha and the revolt of the Mahdi.

The present volume concludes with a further 200 pages on the two component administrations into which the Empire was then divided—the Governorate General centred on Khartoum, to which Darfur was presently added, and the autonomous province of the Eastern Sudan which included Kassala, Keren, and the ports of Massawa and Suakin. Equatoria under Gordon was also independent, though it constituted a drain upon the military and financial resources of the *hakimdar* at Khartoum.

The financial problem overshadowed all else at this time and the Khedive was continually harrying his governors for revenue. The Sudan was supposed to contribute £E. 150,000 a year to the Egyptian exchequer and the impossibility of its achieving the task is clear enough when one remembers how long it was after the reoccupation before the budget was balanced. The abolition of the slave trade had ruined the big merchants and diverted from Egypt to Tripoli the profitable caravans from Wadai. Darfur trade to Egypt also ceased after the conquest since other products played so small a part that the direct traffic was no longer profitable. M. Douin quotes various estimates of the Sudan's export trade at this time. They agree in putting the traffic in ostrich feathers easily first, with gum and ivory second and third. Even the ostrich feathers, products of the pens of Kordofan which only ceased to exist in recent years (when feminine caprice changed the fortunes of central Africa,) were of inferior grade in the world's market to the wild products from further west.

A new trade could doubtless have been built up in time but we have seen how Gordon and the Khedive lost their battle with Zanzibar for the trade of the Lake Kingdoms, and for the rest of the empire the crash came before the potentially remunerative conquests could produce any return for the heavy capital outlay.

This problem of finances crops up everywhere. The determination of the best administrative boundaries exercised the Khedive as much in the northern Sudan as in the south. The problem of the Butana (Shukria v Hadendoa ; Gedaref or the Blue Nile) was further complicated at this time by the independent status of Taka ; but Munzinger's reaction to the news of the transfer of Gallabat district to him from Sennar was influenced entirely by the reflection that the new district was financially a liability. The Khedive was apt to judge his governors largely by their success in collecting revenue and Munzinger was already out of favour on this account. In a letter which was probably never sent Ismail reproved him for being too much the savant and too little the tax-collector, but he knew well enough that the enthusiastic Swiss had his hands full in preparation for the operations against Abyssinia, (an expedition was projected from Gallabat to Gondar as well as that through Aussa on which he lost his life) and in clearing up the mess of Ahmed Mumtaz Pasha's impracticable commercial schemes. So he forgave him in words of almost paternal affection.

Ismail's correspondence with his various subordinates has a double interest. It is M. Douin's method to describe the process by which decisions were reached by quoting the khedive's correspondence, the various plans put forward in councils of war or peace, or the actual minutes of the British Foreign Office, indicating his editorial opinion only by an occasional comment or by a Thucydidean juxtaposition of the final decision and its results. The value of this method, apart from its heightening of the reader's interest, lies in illustrating the character of the actors as well as the course of events. From this illumination Mr. Dashwood of the Foreign Office appears as the advocate of a Palmerstonian policy and the Khedive himself emerges as a ruler of very real ability. He took an active and detailed interest in every aspect of administration as well as general policy, and was himself the originator of several fruitful decisions, such as the attachment of the Sudan to the Ministry of War instead of the Governor-General having to deal with all the various ministries according to circumstances. The budgets came under his personal scrutiny and we find him dealing with various familiar problems such as the necessity for granting funds

for the repair of mud buildings sufficiently early in the year to enable them to be completed before the onset of the rains. His letters show a nice appreciation of the character of the recipient though he was less successful in applying his judgement to the choice of the right men for important posts. He owed to Nubar Pasha the appointment of Gordon, his ablest and most loyal proconsul, and his decision on patriotic grounds to appoint Rateb Pasha to command the Abyssinian expedition instead of the American general Loring lost him all that he had hoped to win in the East. Nor was he above deliberately deceiving his own subordinates as well as his potential enemies or the European powers and he was ready to make McKillop the scapegoat for the Banadir fiasco. This however was a risk that subordinates must be prepared to take. The Khedive was a man of inexhaustible energy, unusual powers and an agile mind. He failed only through the poor quality of his officials and his officers and the roguery of the charlatans and adventurers who surrounded him in Cairo.

Mr. Douin's final chapters comprise in effect the annual reports of the two Sudan governments for the years concerned. The Shilluk revolt is described in some detail⁶ and the various branches of government are covered in turn. The most important contemporary feature was the development of communications which followed, accompanied and in some cases preceded the various military expeditions. During these prolific years the general lines of development were laid down which determined the shape and lay-out of the Sudan today.

The Railway was begun in 1873 under the most favourable auspices. John Fowler, afterwards one of the designers of the Forth Bridge, was its first consulting engineer, and Shahin Pasha King, a personal friend of the Khedive, its first director. Railhead left Angash and

6. To the account in S.N. and R. Vol. XXIV 1941 we may add the following:—

Reth Kwadhkir (p. 4 top) starved himself to death in captivity. His son "Ewal" remained at large with a following and had a secret interview with Gessi Pasha in June 1874 at which he refused to carry his complaint to the Khedive on the grounds that he would never get there alive. He therefore took refuge with 3 or 4 thousand followers in Gordon's Governorate across the river, so accentuating the friction between Gordon and Yusef Bey at Fashoda. We also learn that the Govt. Reth "El Ganek," appointed in Kwadhkir's place in 1866, was goaded into revolt and eventually crucified by order of the Khedive in 1874.

headed southward round the Second Cataract, but even before the railway came to be involved in the financial ruin of its master progress was continually retarded by the lack of skilled local direction. Labour was the chief problem, and nobody at Wadi Halfa knew how to tackle it. So great were the difficulties over the supply of unskilled labour and so obstructive the governor of Dongola to Shahin's appeal for *tulba* that the Khedive resorted to the drastic expedient of putting the province, together with the districts of Wadi Halfa and Aswan (for the Aswan—Shel'al railway was part of Shahin's charge) under his direct administrative control. This bequest, which incidentally deprived Khartoum of one of its few steady sources of revenue, has not been bestowed on any of Shahin's successors, though it may not be altogether fanciful to suppose that its memory lingers to this day in Atbara, where the General Manager alone of departmental chiefs flies before his office the twin flags of an administrative official.

The conquest of Darfur opened vistas of extension and although Colonel Purdy's suggestion that the caravan route from Fasher to Cairo should be diverted to the Wadi El Melik was turned down by the Governor General it was along this line that a party of railway engineers set out from the neighbourhood of Debba a year later. The story of this expedition with its prodigious consumption of alcohol is familiar from the pages of Ensor. The scheme was for a main line to Fasher via Kaga Surug with a branch to Omdurman across the Bayuda desert. Its construction might have changed the whole subsequent orientation of the Sudan, but the tottering financial structure of the Government at Cairo was now to have its baleful effect. Drastic cuts in railway expenditure had to be made, and we find the consultant engineer unselfishly offering to reduce his own salary by two thousand a year.

Meanwhile inland water transport was also being studied and developed, rapids and shallows charted, and the sudd blocks cleared. The fleet of small side-paddle steamers inherited from Baker was augmented and maintained by a dockyard on the Khartoum water front which has left modern Khartoum the Mogren village as its legacy. The steamers plied regularly south to Gondokoro and north to Berber,

whence the caravan route to Korosko was included in the Khedive's panoramic purview. Sheikh Mahmoud Hussein Khalifa of the Ababda was relieved of his functions as concessionaire at this time while his father Hussein Bey was on trial for alleged misdemeanour as Governor of Berber and Dongola. The Khedive also showed an uncanny insight into technical matters on which the tread of unqualified angels would necessarily be delicate. He fought his own engineer over the best means of propulsion for river craft. Fowler had recommended that the fleet proposed for the Halfa reach should be provided with tunnel screws but Ismail preferred the stern paddle wheel. For good or evil the Khedive had his way and the stern paddle wheel became, and remains to this day, the standard propelling agent for the navigation of the Sudan Nile.

The most spectacular progress made was however in the realm of the telegraph. By the end of 1876 the line which had been built from Aswan to Khartoum in the late sixties was being extended towards the furthest limits of Egyptian rule. One branch leaving Berber ascended the Atbara to Kassala and from Kassala was carried over the hills to Massawa. This was built mainly as a line of communication between the Ministry of War in Cairo and the Sirdar's headquarters during the war with Abyssinia. Another branch connected Khartoum and Sennar. A third was laid between Omdurman and El Obeid. This served also as a military link during the Darfur war. From El Obeid the line was extended westward to Foga, the capital of Eastern Darfur, where it arrived in July, 1877. It was one of the tragedies of the *Mahdia* that this network of telegraphs, like everything else good and bad in the Egyptian administration, was utterly destroyed within a few years of its completion.

Through every phase of life in the Sudan during these years the universal ignorance of the principles of public health caused a terrible mortality not only in the various wars but among troops in garrison in the more settled regions of the country. People died like flies of typhus and smallpox though against the latter an elementary form of vaccination was practiced. The Sudanese combined ignorance with curiosity for while they resisted the census they took readily to vaccin-

ation as did the troops to branding. To improve public health the Governor General appointed Dr. David Lowe as chief medical officer of health. Lowe is the first recorded British civilian in the service of the Sudan Government to request and be given the privilege of three months annual leave 'to be spent in his own country.'

No review can do justice to the enormous mass of material, covering as it does every phase of the administration, which is displayed and explained in these volumes. M. (should one say Commander?) Douin's masterly, yet unobtrusive, editorship has made it possible for the first time to study in detail the working administration of the Sudan during the closing years of Turko-Egyptian rule. All we had before were secondary authorities : chiefly the biographies and autobiographies of foreigners serving in the administration. Now at last, through the initiative of the Royal House of Egypt, we have unfolded for our study the archives of government, the primary authorities which alone enable us to appraise the place in history of an energetic, empirically-minded, well-meaning, if unrealistic Viceroy.

K. D. D. H.

R. L. H.

THE ABYSSINIAN CAMPAIGNS.

THE OFFICIAL STORY OF THE CONQUEST OF ITALIAN EAST AFRICA.

London, His Majesty's Stationery Office. 1/6d.

15 copies for 20/-.

From time to time, reading articles and books about General Cunningham's miraculous march from the Juba River to Addis Abbeba, one has felt the lack of equal publicity for the northern prong of the pincers which met at Amba Alagi. Moreover all the forces which took part in these campaigns, British and South African, East and West African, the famous Fourth and Fifth Divisions, the Ethiopian Battalions and the patriots, have received their tribute in the world's press, except the Sudan Defence Force. The reason for this is probably the absence of a proper Sudan Press to report their activities as they occurred and write them up afterwards. Recently, it is true, attempts have been made to remedy the deficiency. The Information Office in Khartoum has published an account of the part played by the Eastern Arab Corps, and the July 1942 number of the Journal of the African Society included a short summary of the operations of the Sudan Defence Force as a whole (with one curious error confusing Akobo with Gambeila). Neither of these was however sufficiently comprehensive nor widely enough distributed to fill the gap, and it was possibly the realisation of this which prompted the compiler of this official account to give the place of honour on his front cover to a photograph of General Platt shaking hands with some of his Sudanese troops. Nor is this all, as the following extract will show :—

" If the Anglo-Egyptian Sudan had gone, the supply lines to the Middle East up the Red Sea and across Africa from Takoradi to Khartoum would have gone too. Egypt itself would have become untenable. There could have been, in fact, no front in the Middle East. The waspwaist of the British Empire would have been severed by pincers of which the northern arm would have been

Graziani's armies advancing from Libya, and the southern arm would have been the Italian armies advancing from East Africa. It is really not surprising that Mussolini, that radically opportunist adventurer, should have thought that the collapse of France gave him the chance to become a new Pharaoh. Italian residents in the Sudan had no doubt whatever that he was right. They were, of course, interned when Italy declared war. But they were amused rather than distressed, and frankly declared that in a few weeks the Sudan would be Italian and the gaolers would become gaolers.

But there were imponderables. Our men were few but good. Their supreme commander, Major-General Platt, was supremely cool and competent. He and his men succeeded in bluffing the Italians into thinking our forces were far stronger than in fact they were. This difficult and vital task fell mainly upon the motor machine-gun companies — incidentally a purely Sudanese force with only two British officers to each company. They deserve in the battle of Africa the same tribute as the Prime Minister paid to the fighter pilots of the R.A.F., in the Battle of Britain; for rarely has "so much been owed by so many to so few."

The Sudan Defence Force could ask for no higher tribute.

The majority of readers even in the Sudan will find a great deal in this account of which they were ignorant. The story of Gideon Force, for instance, is I think told here for the first time and is sufficiently remarkable to warrant a historian of its own. The day when the Burye garrison, some 5000 strong, came pounding down the road to Debra Marcos "chased by 300 Sudanese experts" and swept through the unfortunate Second Ethiopians at Dembacha; the siege of Debra Marcos itself—300 men besieging 12,000 and taking the position in just under a month—the surrender of the 69th Colonial Battalion at Mota to 60 men and a mortar; these are incidents in as fantastic a campaign as has been fought since the days of Cortez.

In form the booklet—it runs to some 150 pages—is a model of its kind. The layout is logical and clear, and is prefaced by an ingenious chronological table of contents. The 27 chapters are grouped into five parts—The Shadow behind Suez, The Attack from the North, The Path of the Emperor, The Attack from the South, and The Search for the Scattered Armies. The compiler has succeeded in writing up the various reports which were his material into one cohesive account,

always absorbing, never pedestrian, devoid of purple patches and journalistic clichés but with a happy choice of expression to touch in the higher lights of the story. To quote three examples:—

“As their last disciplined formations passed through to the Keren plateau, the Italians blew down 200 yards of cliff where the gorge was no more than a colossal axe-wound in the mountains, and their guns, machine-guns, and grenades were ready behind the rocks to defend two other road-blocks on the British side of the obstruction. The “I” tanks with Gazelle could not break it. Keren was like a great mediaeval castle whose portcullis has fallen down and drawbridge has been lugged up at the last moment in the face of the triumphant enemy. Above, the walls were manned by the still panting Savoia Grenadiers.”

“Never in this campaign did the Italians strew mines so thickly and so cunningly as they strewed them before Wahni. They were planted not only in the road but up to 200 yards in the thick grass on either side. 2nd Lieut. Premindra Singh Bhagat, Royal Bombay Sappers and Miners, grimly led the column through the 15 minefields one after the other. More than once blown out of his vehicle, his eardrum pierced, Bhagat refused to quit and himself cleared the lot in four days. He thus won for India her first Victoria Cross of the War, having performed, in the words of his commanding officer, “one of the longest continued feats of sheer cold courage I have ever seen.”

“There had been moments of deep anxiety in this campaign that had climbed every foot of the road until it lowered the Italian flag on Amba Alagi: at Agordat the enemy might have torn British communications to ribbons by an attack to the west; at Keren if he had attacked the open northern flank of the British positions after the first failures on Sanchil he might have captured the British Command and the entire British artillery. There were reverses at Keren when all seemed black, when mangled battalions had to be pulled out of the thin line and replaced by others not yet up to strength, and when plans had to be recast day after day. But the British Command never surrendered the initiative, always whetted the sword for another attack. The iron order and the superior training of our soldiers found them prepared for the casualties, the mountains, the heat and the cold. An antiquated air force, pointed with 10 Hurricanes and braced by British skill and morale, downed the best types that Italy could provide. As the South Africans passed through Massawa on a clear route to Egypt, the staff in Asmara could afford to sit back a little with the consciousness of good work well done.”

The account is illustrated by excellent diagrams and maps and by a most felicitous choice of photographs. If the design for the front cover was chosen for the reasons suggested above, that on the back—of the statue of Mussolini Ozymandias—points the moral of the whole campaign with an ironic smile.

There is one (and only one) small error (in the map on page 17) due to confusion over the name Tehamiyam. The wells where the battle was fought are just north of J. Shushaieb in the Kassala area, not near the station of that name on the Haiya line.

When some future Kinglake comes to chronicle the Abyssinian war in full he could hardly do better than fill in the outline provided by this story. It is well worthy of its subject, which is high praise. If there is anything to regret, it is that it could not have appeared earlier this year when we were hearing so much of the inefficiency of our high command and our army's lack of offensive power. The very brilliance of the East African successes had tended to obscure their worth and to belittle the problem which originally faced the two small armies based on Khartoum and Nairobi, and the contemptuous references of broadcasters to the quality of the Italian troops detracted from the prestige of their conquerors. No one who has read this account can fail now to appreciate the magnitude of the difficulties or the efficiency with which they were surmounted. The Italian was beaten by a series of shocks—his enemy persistently achieving the impossible until hope and morale faded out together.

As for "our Wullie," as the Scottish other ranks called him, he has just completed his second obstacle race at the far end of Madagascar, and must hold the record for square miles of territory occupied in proportion to casualties and use of men and materials. There was not one officer or man to spare in the Keren campaign from Headquarters downwards and outwards; and we in the Sudan have every reason to be grateful that our fate was in the hands of a man who could make such brilliant use of the mobile military machine which his predecessors had created out of the old Sudan Defence Force.

K.D.D.H.

WATER BORING IN UGANDA 1920-1940.

By C. B. Bisset, M.A., B.Sc., D.I.C., F.G.S.

*Geological Survey of Uganda, Water Supply Paper No. 1, 32 pp. 1 pl. ;
Government Printer, Entebbe, 1941, price 2s.50c.*

This small handbook reviews the history of drilling for water, topographical and geological conditions, and the development of underground supplies in Uganda. The general account of the operations of the Government is of interest in the Sudan. The account is clearly presented. It covers not only the search for underground supplies, but their exploitation for the benefit of the population by means of simple pumps. This practice, which has apparently been successful, is different from that adopted in the Sudan. In Uganda, where water-born disease has to be countered, the installation of open wells has not been tried. Instead the bores have been fitted with a simple type of hand-pump. The pump is maintained by Africans, aided by a bore-hole maintenance unit under a European Driller. Propaganda is generally fairly effective in helping the village communities to take care of their pumps, and not allow wilful damage. The organisation of clean and covered water-supplies is growing.

Figures are given of the results of boring operations, classified according to the type of terrain, and district. The region which is perhaps of most significance to the Sudan is that in the north—Karamoja, west to the Nile, as far as the Congo border.

In the Karamoja area, similar in geological character to a great part of the Sudan, and with a rainfall between 15 ins., and 35 ins., (380 mm. to 890 mm.) comparable with El Obeid—El Fasher, 52 holes have been sunk, with 46% successes, average depth 140 ft., (to water 107 ft.).

In the district west of Karamoja, to the Congo border, north of 2°N., borings are in the "basement complex" (*i.e.* ; similar rocks to those of the El Obeid and El Fasher districts and the Province of

Equatoria). The rainfall is between 30 ins. and 55 ins. (760 mm. to 1400 mm.) comparable with that of the Nuba Mountains and south of the Bahr el 'Arab—Malakal line. 121 " more recent " bores reached average depth of 127 ft., (64 ft. to water) and scored 90% successes. This result, obtained in the period 1938-40, is compared with the results of drilling in an earlier period (1930-4) when a total of 69 bores were sunk, with only 42% success. The reasons for the earlier failure is discussed (pp. 16-18).

G.A.

CORRESPONDENCE.

KHARTOUM,

20th May, 1942.

THE EDITOR,

SUDAN NOTES AND RECORDS.

DEAR SIR,

In his memoir of the late Dr. John Ball in *S. N. & R.* XXIV page 212, Mr. Newbold states "in spite of all his technical versatility he was, I think, primarily a surveyor" and I therefore wish to point out the following important omission in the list of his published writings, given on pages 216-217 of the same issue:—

Year 1917. "Modern Methods of Finding the Latitude with a Theodolite." *Geographical Journal* XLIX 440-58.

This monograph is a mine of information to surveyors on matters of principle and procedure in astronomical observations with a theodolite and it has exerted a profound influence on field methods employed by members of the Sudan Survey Department. Dr. Ball enunciated an important new principle as follows. In all text-books on surveying, the procedure of "changing face" is laid down for the measurement of altitudes of terrestrial and celestial objects with a theodolite in order to cancel out collimation error. Dr. Ball however pointed out that, in star observations for latitude, collimation error is eliminated by suitable pairing of stars of north and south aspect without "changing face." Further he maintained for various sound reasons that the accuracy of the results is enhanced by not "changing face" and the ease and speed of observing is thereby also increased.

The paper is still modern in the sense that all authors of text-books on Field Astronomy, published in Great Britain since 1917, have neglected this principle by Dr. Ball and in my opinion this is especially a matter for regret as the practical application of it greatly simplifies star observations both for amateurs and professionals. I should therefore like to place on record this appreciation, of what I consider, from my own and my colleagues' experience, to be a great contribution to the practical advancement of an important branch of surveying.

Yours faithfully,

D. F. MUNSEY.

17th July, 1942.

THE EDITOR,

SUDAN NOTES AND RECORDS,
KHARTOUM.

DEAR SIR,

I have read with great interest your Note by Capt. Greenwood, entitled *Escape in the Grass*, which you published in Vol. XXIV.

The author is my cousin, Lt.-Col. R. C. Greenwood, and I can remember him telling me this story when he was on leave in England soon after the occurrence. Since then I have often heard the tale from him.

When I was posted to Wau late in 1934, he wrote up the story in the form in which it now appears, and sent it to me with the injunction that it was for my eyes and ears, and for mine alone. I felt, however, that the story was of official interest, and on showing it to the Governor of the Bahr-el-Ghazal he asked for a copy for the Muderia records. In due course I was also asked to supply a copy for Aweil District. I suppose, therefore, that I must accept the responsibility for it having reached other eyes and ears than mine.

If you wish it I could put you in touch with Colonel Greenwood.

Yours truly,
F. O. CAVE.

EDITOR'S NOTE :—

Steps are being taken to accept Colonel Cave's offer and to tender suitable apologies to the author for taking his approval for granted.

EDITORIAL SECRETARY,
SUDAN NOTES AND RECORDS.

DEAR SIR,

SPURWING GOOSE--VOL. XXIV.

I was much interested in that little article and turned up my diary for 1918 and found the following entry. "Shot an enormous Spurwing Goose with the single shot .300 rifle." I expect it was weighed by the spring balance machine we used for Aigle.

Yours faithfully,
HAWARDEN.

ADISHAM,
CANTERBURY.

21st July, 1942.

KHARTOUM,
OCTOBER 22nd, 1942.

THE EDITOR,
SUDAN NOTES AND RECORDS

DEAR SIR,

In my review of Dr. John Ball's '*Contributions to the Geography of Egypt*' on p. 224 of your Volume XXIV, I referred to the death of large numbers of fish in the Sudd region of the White Nile at the beginning of the rains last year, in connection with Ball's quotation from a record that 'in the winter of 1245-1246 a great storm broke over the lake (Fayum) producing such a chilling of waters as to cause a great destruction of fish.'

Much interest has been taken in this phenomenon; and some people with whom I have discussed it, still consider that the actual cause of death is still unknown. I should therefore like to draw your readers' attention to a note by C. K. Ricardo Bertram of the Fisheries Office, Haifa, published in *Nature* for July 11th, 1942, and entitled '*Death of St. Peter's Fish in Lake Huleh, Palestine*,' which records how the cold last winter killed large numbers of fish, particularly members of the genus *Tilapia* or St. Peter's fish, of the family *Cichlidae* in that lake. This family alone was affected, *Cyprinidae* and *Clariidae* being apparently able to withstand the cold.

Mr. Bertram states that the lowest temperature recorded from the lake was 9° c: and suggests that though this is not very low, probably the rate at which the temperature fell was more important in affecting the fish than the actual temperature; although he also suggests that probably sudden drops far below 9° c: occurred.

A sudden drop in temperature due to a heavy fall of rain at the end of a dry period, when the temperature of the shallow water must have been fairly high, is just what was suggested as the cause of the death of the fish in the Sudd last year. There too the dead fish appeared to be largely of one kind. Unfortunately I do not know its name, although I noticed that there were only very few Nile Perch (*lates Nilotica*) among them.

It would therefore appear that possibly the fish were killed by the actual sudden chilling of the water.

Yours, etc.

A. J. ARKELL.

P.S.—I sent two photographs (taken from the Steamer) which showed the kind of fish forming the majority of the dead ones, to Dr. C. K. Ricardo Bertram, and she has identified them as belonging to the genus *Citharinus* and to the family *Characinidae*.—A.J.A.

S.D.F. BASE HOSPITAL,

M.E.F.

18th JANUARY, 1943.

THE EDITOR,

SUDAN NOTES AND RECORDS,

KHARTOUM.

SIR,

Allow me to pass one criticism and to add a few notes regarding the subject of the recent article by Dr. Bloss "Notes on the Health of the Sudan prior to the present Government."

Dr. Bloss talking of Cholera in Suakin in 1889 states "this is probably the last time Cholera was epidemic in the Sudan." I think the outbreak which affected the Nile Expeditionary force in 1896 can be called an epidemic. Cholera appeared on June 30th in Tewfikieh a village outside Halfa and spread rapidly. In the first 3 weeks of July 300 fatal cases occurred amongst the natives of Wadi Halfa. It followed the troops up the river and some 40 officers and men of the North Staffords shires alone died of it. The epidemic finished in August of the same year.

Ignatius Pallme writing in 1884 has some interesting if not always accurate notes on diseases in Kordofan. "The chief diseases are fevers, dysentery, abscesses about the neck (called durore), dropsy, smallpox, jiggers, skin diseases, and lues." Can this "durore" be tuberculous adenitis? As regards its treatment he says "they open the abscesses with the actual cautery, and when the matter is discharged, dress the wound with an ointment prepared of butter and clay". "Syphilis" he says "was totally unknown in these regions in the preceding century, and the natives have only been inoculated within recent years, through the intermediation of the Egyptian troops stationed in the province. He describes an ingenious if primitive enema syringe. "The lavements are administered in the following manner:—they take the thigh bone of a fowl, and clearing away the

marrow, fasten to it a portion of the intestines of a sheep, into which they pour a decoction of garra, and then insert the pipe into the anus, compressing the gut until the whole of the contents pass into the abdomen." Pallme's advice to travellers contrasts markedly with that of Bruce as quoted by Bloss. "I found," he says "on the contrary, that those persons who indulged in ardent liquors such as brandy, merissa or bill-bill, remained far more free from fever and dysentery than those who endeavoured to escape those complaints by the observance of rigid diet and other prophylactic means". From my own observance and experience I am inclined to agree with Pallme.

Petherick writing in 1861 stresses, like so many other writers, the prevalence of Guinea worm and it is obvious this disease was far more common than it is now. He describes the treatment of smallpox in vogue then in Kordofan: "As soon as the disease is pronounced, a bed of ashes is prepared on the ground, upon which the patient is laid in a state of nudity, and from which he is not removed until either carried to the grave, or until, by a marvel, he recovers. The only remedy applied is the juice of raw onions to the eyes when they become attacked."

Jephson (1890) in his book on Emin has some medical notes on the Bari around Juba. "Fatal diseases are rare but eye diseases, tumours, and syphilis are common, to guard against this last disease inoculation is sometimes practised, but with no good results, however. Epidemics of smallpox and a low kind of typhoid fever often carry off thousands, and famine arising from drought often adds greatly to the mortality." Still speaking of the Bari he says "... most of the women and many of the men had enlarged knees of that sort which is known in England as a housemaid's knee." This shows that Yaws must have been prevalent then as the same condition is still got, due to this disease. He also mentions an interesting birth of quintuplets at Wadelai (then part of the Sudan), three boys and two girls. One of the boys died but the rest did well. He sent them a present of 10 dollars.

Dr. T. H. Parke, medical officer of the Emin Pasha relief expedition, writing a year later also mentions the practise of inoculating against

syphilis which "is very common all over the Pasha's province" he says it must have originated in the country as it was there when the first European traveller arrived... we certainly have seen the disease in parts of the forest which have never before been traversed by any white man or even Arab." The forest he is talking about is the Ituri in the Belgian Congo but it is an interesting observation which does not confirm the common belief.

He also stresses the prevalence of Guinea worm, this time amongst the Mahdi (this is the Madi of Kajo-kaji area) and in this connection states "It (the guinea worm) has been known from time immemorial as one of the pests of human life, especially in the regions of Africa and Asia which radiate from the Red Sea as centre, and the enemy whose attacks decimated the wandering Jews in the wilderness, and to ward off whose ravages Moses lifted up the brazen serpent, is said by some modern materialistic naturalists to have been no other than the *drancunculus medinensis*."

Emin Pasha himself unfortunately tells us very little of his medical work in the South. He seems to have been alone in not advocating quinine for the prevalent malaria and treated the enlarged spleens by first rubbing over the skin of the splenic region with ointment or solution of tartar emetic, and then applying oil of rosemary. Emin, however set the example of attacking deficiency disease by the introduction of new foodstuffs such as rice and sugar and many of his experiments are still worth studying.

Yours etc.,

A. CRUICKSHANK.

Ignatus Pallme "Travels in Kordofan" 1844.

J. Petherick "Upper Egypt and Central Africa" 1861.

A. J. M. Jephson "Emin Pasha—The Rebellion at the Equator" 1890.

T. H. Parke "Experiences in Equatorial Africa" 1891.