

The current here runs at the rate of from 2 to 3½ miles per hour ; but above it, where the river increases in width, a proportional decrease in the rate of the stream takes place, and it does not exceed 2 miles.

The Atbara River, at its point of junction with the Nile, has a deep, well-defined section, and a bed-width of some 400 yards ; the banks are steep and high. Although the channel is dry in summer, the flood marks register a height of 25 feet above the bed. The velocity of the Atbara current in flood is so great that it forces the water of the Nile across on to the western bank. The sandbank thus formed causes considerable difficulty to navigation, and in the early spring of 1898 caused the division of the fleet of gunboats into two isolated halves, neither of which could have moved if required to the assistance of the other.

South of the junction lies the town of El Damer, formerly celebrated for its learning and university. It is now again a town of growing importance, and is to supersede Berber as the headquarters of the Province. Railway bridge over the Atbara here. The Nile-Red Sea Railway branches off up the right bank of the Atbara, north of the bridge.

From the Atbara to Khartoum the distance, by water, is about 200 miles. On this reach the slope of the river is separated by the Shabluka Cataract into three portions. This cataract begins at some 35 miles from Khartoum, and continues as far as Wad Habashi, 55 miles further north.

The average bed-slopes are :—

From Khartoum to head of Cataract	..	..	111000
Cataract and Rapids	..	..	5500
From Wad Habashi to Atbara	..	..	12500

Between the Atbara and Shendi (86 miles) there is little variety in the river scenery.* The average height of the banks over the river is from 25-28 feet ; the channel is broad and interspersed with many sandbanks and islands. The eastern bank is flat, and covered with a thick growth of scrub and thorn bushes ; the soil is good, but the halfa grass, owing to years of neglect, has got such a hold that very considerable labour is necessary in order to remove it and render the land fit for cultivation. The western bank is lower, and the strip of cultivable land much narrower than on the eastern shore. In places, ravines or "khors" run back from the river, and these in flood must be full of water. The whole tract has a most desolate appearance ; villages are few and poor ; inhabitants and cattle are wanting, although a few small flocks of sheep and goats are occasionally met with ; here and there a sagia is at work ; but the cultivation is confined chiefly to the foreshore of the river and to the islands. At certain points low ranges of hills, such as Jebel Egerdan and Jebel Umali approach the river on either side. Fuel is fairly plentiful, and everywhere the thorn jungle has encroached and swallowed up the areas which were once under cultivation. The depopulation of this district must date from a period anterior to the Dervish rule. Sir Samuel Baker, on visiting the country in 1869, noted the deterioration and desolation which had ensued since his visit of a few years previous. He attributed this ruin to the misgovernment of the Turkish Governor-General.

The "Pyramids of Meroe" are passed about the 17th parallel ; they lie close to villages named Maruga and Sur. The district here between the Atbara and the Nile was in ancient times termed the "Island" of Meroe. (See Chap. IV and Appendix D.)

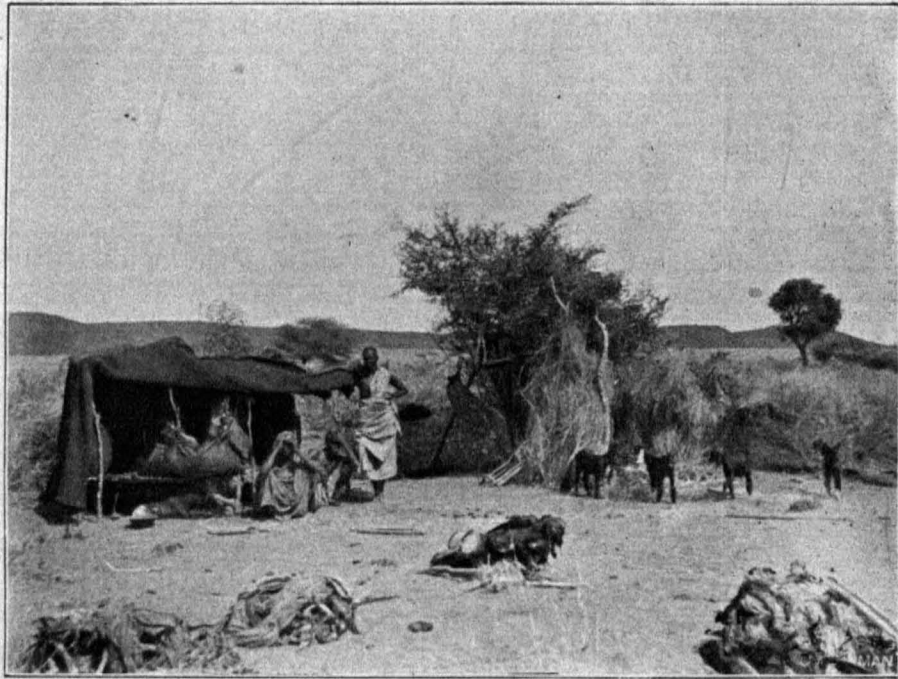
Shendi, 86 miles from Atbara mouth, situated on the right bank of the river and on rocky ground, which extends for half a mile above and below the town, was once the capital of the ancient kingdom of Meroe, and is said to have been the residence of the famous Queen of Sheba. Ismail Pasha, son of Mohammed Ali, was here burnt in his hut by the Jaalin in 1822, in revenge for his barbarities. The town and inhabitants were destroyed in 1823 by Mohammed Ali. It is now reviving considerably, and is the headquarters of the Cavalry in the Sudan ; it owes its selection chiefly to the fine grazing, the gravel soil, and the level country around it.

Four miles beyond Shendi, on the left bank, lies Metemma, the terminus of the trans-Bayuda route from Korti (vide Vol. II), used by the Desert Column in 1885. The town was not assaulted or taken by our troops on that occasion, but was the object of a reconnaissance in force, 21st January, 1885 ; it lay dormant until 1897, when it became the headquarters of a projected rising against the Dervishes by the Jaalin tribe. Mahmud, however, was warned in time, and exterminated the conspirators and all their belongings. Over 2,000 Jaalin were killed and the town was destroyed. It is still a deserted ruin, lying over a mile from the river, but is easily recognisable by the solitary grove of date palms which stands out as a landmark in the flat and treeless plain. Here the western desert approaches the water's edge, but a little cultivation is carried on upon the foreshore and the large island in front of the town. The remains of five Dervish earthworks still exist upon the bank up-stream of the town, and another (masked) upon the island. One-and-a-half miles up-stream lies the former village of Gubat, the furthest point reached by the Desert Column in 1885.

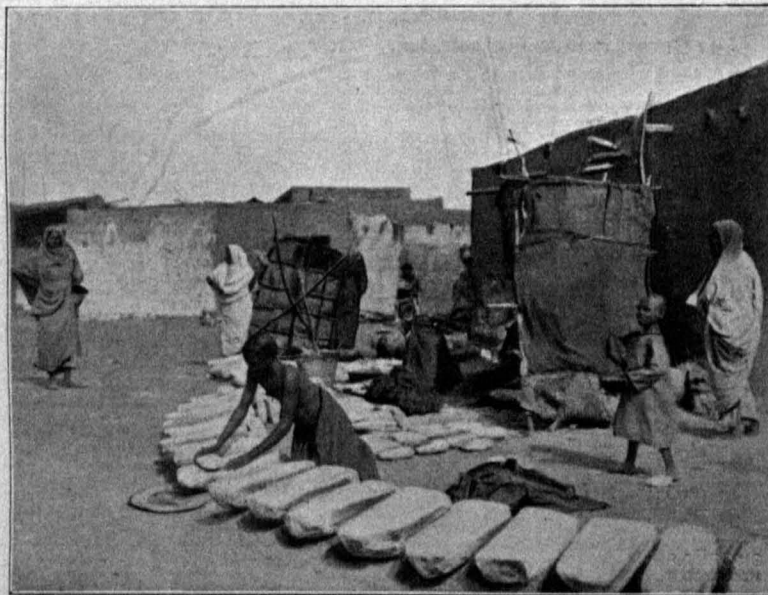
Between Metemma and Wad Habashi the whole country appears to be deserted, and there is a complete absence of life. At one point a series of honey-combed cliffs approaches the river, and runs parallel with it for some 5 miles.

Wad Habashi (left bank), 42 miles from Shendi, was the starting point of the 1898 Omdurman Expedition. The

* A broad road or clearing has been made along both banks from Shendi to Berber. This is to be extended to Abu Hamed.



JAAALIN SHEPHERD SCENE.



CORN GRINDING STONES, OMDURMAN.

soil here is excellent, and the land must once have been cultivated, as traces of the old water-courses are still visible. It is now covered with a dense growth of acacia jungle and halfa grass, which stretches in a thick belt for some 2 miles from the Nile.

About $\frac{1}{2}$ mile inland a large and deep canal runs parallel to the river. This whole tract is entirely deserted, and, from its appearance, it seems probable that it was thrown out of cultivation prior to the rebellion of 1884. Four miles south of Wad Habashi is the boundary between the provinces of Berber and Khartoum, the limits being marked by the isolated granite hill on the east bank, known by the name of "Hagar El Asal." From this point, the reefs forming the tail of the Shabluka Cataract begin, and navigation at low water becomes impossible for steamers.* Although the actual cataract, or rapid, is only some 12 miles in length, the bad water, above and below the pass, extends for a length of some 55 miles, *i.e.*, to Wad Ramla, or to within 35 miles of Khartoum.

Sixth
Cataract.

In summer, *i.e.*, if the railway is not used, this portion of the journey has either to be made in native boats, or by camel portage round the cataract. The land route is shorter than that by the river, being not more than 26 miles in length.

Five miles above Wad Habashi the former cavalry station of Wad Hamed is passed on the west bank. This place was selected as the headquarters of the Egyptian cavalry on account of the good fodder to be found in the vicinity. From here the difficulties of navigation increase; the river is split into numerous channels, and winds between picturesque islands, covered with a luxuriant growth of vegetation. Rocks and reefs appear above the water, and the swirls and eddies indicate the existence of many more below the surface. It was in this part of the rapid, on Mernat Island, that the "Bordein" steamer went aground on returning from Khartoum in 1885. Low serrated granite ridges confine the river on either side.

Wad
Hamed.

At the entrance of the Shabluka gorge, the channel takes a very sharp turn to the east, and the section is both deep and narrow—not being more than 200 yards in width anywhere, and in some places even less than this. The river runs between high granite hills for some 4 or 5 miles, with a very high velocity. The marks upon the rocks show that the highest flood level is not more than 7 feet above the water level of the river in March.

The northern entrance to the pass was guarded by five Dervish forts, now in ruins; four on the western and one on the eastern bank. These completely command the channel. On emerging from this gorge the river widens out, and the difficulties of navigation recommence. Reefs, rocks, and islands appear in all directions; the solitary peaks of Jebel Royan and Jebel Tyem stand out, one on either bank. At some 20 miles up-stream of the pass Wad Ramla is reached; from this point to Khartoum navigation, with care, is possible for steamers, even at lowest Nile. The country on both sides becomes more open, and many large islands are passed, most of which, notably that of Tamaniat, bear fine crops of dura. Large quantities of hay are also grown upon these islands and transported to Omdurman. The land on the east bank is good, and the cultivable strip extends for a considerable width, though covered as usual with scrub and rank grass. On the west bank the desert approaches the river closely.

OMDURMAN, KHARTOUM NORTH, AND KHARTOUM.

At 198 miles from the Atbara, the town of OMDURMAN is reached—the long low ridge of the Kereri hills to the north marking the scene of the battle in 1898. This town covers a large area, being some $5\frac{1}{2}$ miles in length by 1 to $1\frac{1}{2}$ miles in breadth. Its eastern frontage follows the river bank throughout. Two or three broad streets traverse it, but, with these exceptions, the houses are separated one from another by a network of twisting lanes. Some of the principal remaining Dervish houses, notably those of the Khalifa and Yagub, are spacious and well built. Ebony is much used in the roofs, and where the span is great, iron girders are inserted to support the roofing.

Omdurman.

The "Beit El Amana," or Dervish storehouse, covers a large area. Here are the old powder magazines and stores of a most miscellaneous description. The open-air mosque is simply a large inclosure, and within the "Sur," or great wall, is packed a rabbit-warren of buildings, with narrow and winding streets. The entire town was, during the Dervish occupation, full of old cess-pits; these being merely deep holes sunk in the desert, and open to the air. These pits were probably largely responsible for the disease for which Omdurman attained such an evil reputation (Cerebro-spinal meningitis), but which has now practically disappeared. The Mahdi's tomb and Khalifa's house, the latter still in good repair, are objects of interest for the tourist (*vide* pp. 266 and 252 respectively).

The town lies in a direct line 3 miles from Khartoum—but by water another mile, some 40 minutes by steamer. Very many of the houses are now deserted, but the population still numbers some 46,000. It lies on good gravel soil, and comprises, besides the old Dervish buildings above-mentioned, barracks for the garrison, which consists of 2 battalions infantry and 2 maxims. There is a large market (Suk), where a considerable trade in gum and other produce is carried on. On the sloping banks a large boat traffic is at work. Steamers and ferry boats connect the

* For further details of this cataract see N.O. (1st edition, pp. 74–80; 2nd edition, pp. 78–83).



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[W. Crooke, Edinburgh.]

MAJ.-GEN. SIR REGINALD WINGATE.
Governor-General and Sirdar.

town with Khartoum. It is the residence of the sub-Governor of Khartoum Province who resides in a house built in the late Khalifa's enclosure.

KHARTOUM NORTH (lately Halfaya) is the terminus of the railway from Halfa, and lies opposite to Khartoum, on the right bank of the Blue Nile. It includes storehouses, workshops, the headquarters and the dockyard of the Steamers and Boats Department, barracks for an Egyptian garrison, consisting of infantry and artillery, Custom-house, etc., etc. Population about 2,000. A steam chain ferry, running every half-hour, connects it with Khartoum.

Khartoum
North
(Halfaya).

KHARTOUM, including the towns of Khartoum North (late Halfaya) and Omdurman, together with a little hinterland (*vide* App. G.), forms a Province by itself. It is once again the capital of the Sudan and the seat of Government, though Omdurman still is, and Khartoum North will probably become in a few years, the principal trade centre.

Khartoum.
Principal
towns.

Khartoum (meaning elephant's trunk—with reference to the point of land jutting out between the two Niles) is a rapidly growing town, on the left bank of the Blue Nile, just before it joins the White Nile, and is built on the site of the old town of the same name, which was so gallantly held by Gordon and destroyed by the Dervishes in 1885. Its population is now 8,500 souls, and is gradually increasing. The soil is alluvial; bank of Blue Nile about 30 feet above the river at low Nile. In 1898 the old town was found entirely deserted and in ruins.

The main buildings are the Palace (built in 1899), the seat of the Governor-General; the Government Buildings (including the local War Office and the Offices of the Sudan Government); the Nuzl or Government store, the Post and Telegraph buildings, the Mosque, the Department of Works, the Mudiria (Governor's office), branches of the National Bank and the Bank of Egypt, the Gordon College, the British barracks (holding one battalion of British troops), houses of the chief officials, and a small town of well-built mud-brick and stone houses (including a market square, landing place, a good European hotel, club, brick kilns, Zoological Gardens, etc., etc.), which is daily increasing in size.

At intervals along the line of the old entrenchments from east to west are the barracks occupied by the Egyptian Army which are named after Ismail, Tewfik, and Abbas Pashas.

Barracks.

Outside these lines are villages of mud-built and grass-roofed houses of various Sudanese tribes, whose members are employed mostly in building and in other pursuits. (*Vide* also Chap. V.)

Higher up the Blue Nile at Buri are the Gordon College and British barracks.

The town is symmetrically laid out with wide avenues planted with shady trees, and the class of buildings erected must be in strict conformity with the standard fixed for each particular quarter.

Town, etc.

The public gardens and "Zoo" are situated at the west end of the town; these, especially the latter, have only as yet reached an embryo stage.

The normal garrison of Khartoum consists of one battalion of British Infantry, relieved annually in October, and three battalions of Infantry of the Egyptian Army, as well as Cavalry and Artillery. (*Vide* p. 3.)

Garrison.

The market at Khartoum is poor and more expensive than that at Omdurman, which is much larger and better. Meat is usually PT.3 per oke (2½ lbs.) and dura varies from PT.25 to PT.90 per ardeb (300 lbs.) according to the season and the year.

Market.

Building and fire-wood have to be brought long distances from up the Blue and White Niles, and are consequently both expensive.

Labour is scarce and difficult to obtain owing to the many buildings, etc., at present under construction.

The rainfall is very variable but that of an average year is very slight;* rain seldom falls on more than 10 to 15 days in the year, but when it does it is generally in heavy thunderstorms, which occur at intervals from June to October, and are usually preceded by duststorms, very similar to those at Kassala. In some years heavy storms occur as early as May.

Rainfall.

The climate is comparatively good all the year round, though in August, September, and October, and occasionally at other seasons, a certain amount of fever is prevalent.† Khartoum is 1,253 feet above the Mediterranean.

Climate.

The hottest month, according to the monthly average maximum temperatures recorded for 1901, is April (110·66° Fahr.), and the coolest January (88·34° Fahr.). April, May and June are here, as elsewhere, as a rule, throughout the Sudan, usually the three hottest months of the year. *Vide* also p. 12.

The highest temperature recorded in 1901 was in July (116·6° Fahr.), and the lowest (51·8°) in December.

The wind blows from the north almost continuously from November to April, after which it varies considerably, and finally settles down in May or June to blow pretty consistently from the south until the end of October or beginning of November.

* The rainfall in 1903 was 67·9 mm. or 2·7 inches, of which 24·1 mm. fell in May and the remainder in July, August, and September. In 1904 the rainfall amounted to 21·4 mm. or about ¾ of an inch. *Vide* also p. 12.

† The steps taken to exterminate mosquitoes here have proved so effectual that they are now practically extinct. The few stray ones imported by the steamers from the Upper Nile are soon marked down and their larvæ destroyed. For methods of destruction *vide* "Report of Wellcome Research Laboratories—Gordon College—1904."

Posts and
telegraphs.

There is a bi-weekly mail to and from the north, weekly to and from El Obeid, Wad Medani, Goz Abu Guma, and intermediate stations on the White Nile, fortnightly to Kodok, and monthly to stations on the Upper Nile and Bahr El Ghazal.

Telegraphic communication with the following and intermediate stations: Cairo, Dongola, Merowe, Suakin, Massaua *via* Kassala, Gedaref, Gallabat, Roseires, Renk, Kodok, Taufikia and El Obeid. Telegrams to Addis Abbaba can be sent *via* Kassala and Asmara. *Vide* also p. 219.

Ferries, etc.

A Government ferry keeps up communication with Omdurman, and a steamer runs twice daily to and from Omdurman and Khartoum North, calling at Khartoum. There is also, as before mentioned, a steam ferry from Khartoum to Khartoum North and several of the native boat ferries.

The suburbs of these three towns include an additional population of 11,000 souls.

Recapitulatory table of distances by river in section :—

Merowe to Khartoum.

	Intermediate.		From Merowe.	
	Miles.	Kilometres.	Miles.	Kilometres.
Merowe	0	0	0	0
Foot of 4th Cataract...	9	14	9	14
Head " "	77	124	86	138
Abu Hamed	62	100	148	238
El Bagara Rapid	55	88	203	327
Foot of 5th Cataract...	24	38	227	364
Head " "	2	3	229	367
Berber	30	48	259	416
Mouth of Atbara	20	32	279	447
Shendi... ..	86	138	365	585
Metemma	4	6	369	592
Foot of 6th Cataract...	54	87	423	678
Head " "	12	19	435	697
Omdurman... ..	41	66	476	764
Khartoum junction of Niles	3	5	479	771



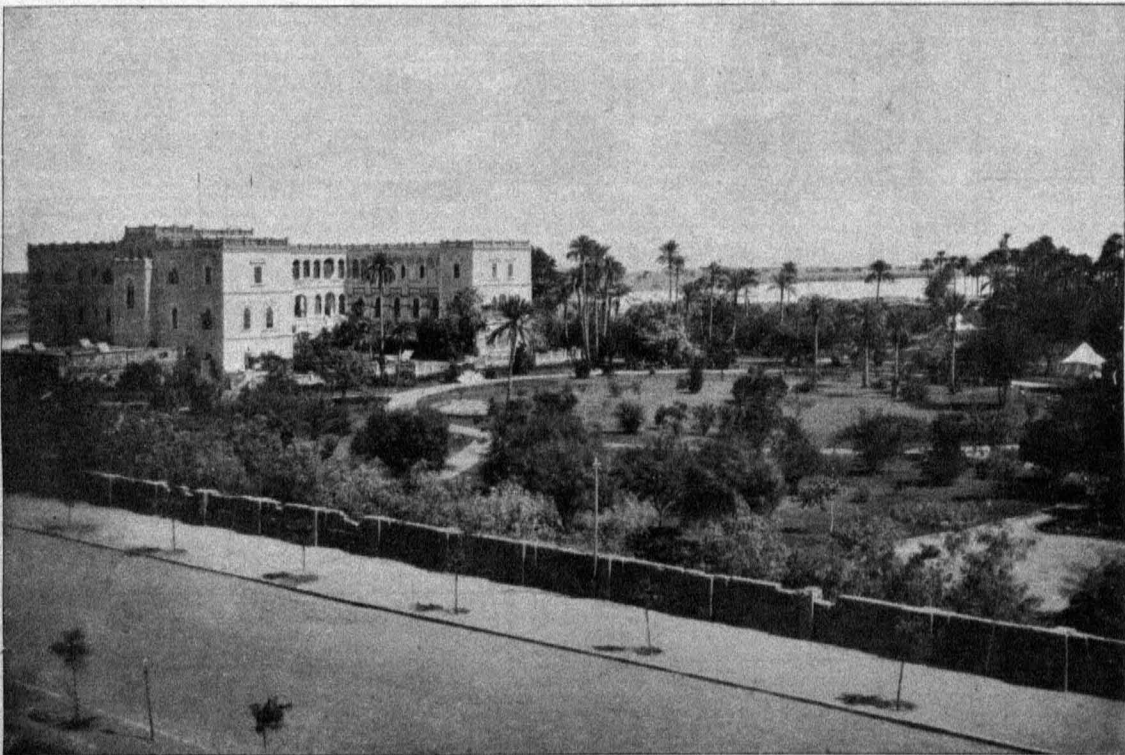
INSIDE OF OLD PALACE, KHARTOUM.



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KHARTOUM : LOOKING NORTH FROM THE WAR OFFICE ROOF OVER TUTI ISLAND.



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[M. Venieris.]

THE PALACE AND GARDEN, KHARTOUM, FROM THE SOUTH-WEST.

Place.	Miles. Kilometres.		Left Bank.	River and General.	Right Bank.
	Inter- mediate.	From Omdurman.*			
Omdurman ...	...	...	On the W. bank, after getting clear of the houses of Omdurman, a hard, sandy track is followed skirting the edge of the cultivation	In the first 15 miles up stream of Khartoum the country on either side is low, flat, and treeless; cultivation is carried out on the mud flats, and on the islands, which appear as the water falls. The water channel is fully 2 miles wide in this reach. It is very shallow, and landing is almost impossible on account of the shelving banks. On these last, as the water falls, a crop of grass springs up, which affords grazing to large flocks of cattle and sheep. Further up stream the channel gets narrower, but it is still over a mile in width. Both banks are low and fringed with thin and low thorny jungle, and except for the isolated hills of Jebel Auli and Jebel Gurun the country is a dead flat. On leaving Omdurman the water channel at once opens out, at high Nile, to 2 or 3 miles, course for steamer close to R. bank	
Kalakla ...	8	8	Left bank low, sandy, some scrub, and further on mimosa woods extending to river		Right bank; several villages, low, sandy, or swampy bank.
Sheikh Salim ...	3	11			Road from Khartoum passes through village Kalakla in large clump of trees and then continues on open desert sand about 2 miles from river; very good going.
Gemmueiya district	6	17	Gemmueiya district.—A long, straggling village of that name and tribe; track passes on desert side of it some 3 miles from river; bank of river difficult of access for watering owing to mud; some bush and trees; low volcanic range to W. Well passed on right just before reaching village 30 feet deep, 7 feet diameter water good. A small tukl village just E. of hill and same name. Track as before.		Sheikh Salim or Wad Um Meriam. Village with high tomb in it. Road about 2 miles from river. After this it enters some low sandhills with large clump of trees on river side about $\frac{1}{2}$ mile off. The first open scrub begins, which thickens as it approaches the river.

Um Arda	3	20	... ..	Low flat island. About 9 miles long, trees S. end. Island banks inhabited by Jaalin and Hassania. S. end of El Arda island.	Scrub gets thicker on R. bank.
Haneik	7	27	... ..	
Jebel Auli	1	28 45	Track unchanged, sparse bush on either flank; good camping ground (at low Nile) and watering place		Road runs round E. of Jebel Auli, a steep bare volcanic rock about 100 feet high. Good camping ground for a brigade or less under the mountain. Another track leads S.E. from here.
Gar El Nabi... ..	2	30	... ..		Road runs $\frac{1}{2}$ to $\frac{3}{4}$ mile from river through open bush to Gar El Nabi; village mostly destroyed.
Jebel Mandara	2	32	Jebel Mendera or Mandara. Well defined table hill 2 miles from L. bank, road passes spur of it. Bank swampy		Bank sandy.
Wad El Kereil	2	34	Village to west of track	Water channel 3 miles broad at high Nile; keep to right bank	Road crossed by small khors and in places by cultivation in zeribas. River invisible from it.
Mohammedia	1	35	... ..	Many small islands	Village; also called Wad El Kereil.
Jebel Barima or Breima(Wad Belal)	5	40	Low hill. Watering place $1\frac{1}{2}$ miles from track. Latter crosses khors at intervals along route; good, some bush and trees, and sand dunes	Sand and swamp alternate on both banks with trees growing into the water. Rocks appear at low Nile to W. of channel just before reaching the Jebel	Road runs through sand hills $\frac{1}{2}$ mile from river and then closes to river at Wad Belal; good watering place and wood station for steamers.
Abu Hagar	12	52 82	Dense scrub just before reaching El Hagar or Abu Hagar. Good camping ground $\frac{1}{4}$ mile to W. in desert. Watering place somewhat difficult of access at river; pools near desert after high Nile. For 2 miles track continues good, then becomes a single camel track, necessitating marching in file through very thick bush. The track to Homra (80 miles) and El Obeid gradually branches off S.W. from the river track	Water channel $1\frac{3}{4}$ miles.	
El Geteina	3	55 88	... ..		Large village divided into 2 parts, clean, good market, some "Shaduf" cultivation. Headquarters of the Geteina dis-

* i.e., the point of junction of the Blue and White Niles opposite the South part of Omdurman. The distances are measured up the centre of the navigable channel, so they are not absolutely correct for the tracks on either bank. The (banks) itinerary given here does not always correspond accurately with the latest map, being sometimes based on road reports of previous dates.

Place.	Miles. Kilometres.		Left Bank.	River and General.	Right Bank.
	Inter- mediate.	From Omdurman.			
Salahia	4	59	El Salahia district. Swamp or cracked mud near river bank. Much dura in Wadi Sadik	South of this thick thorn bush commences. From here to El Dueim (66 miles) the same scenery continues. Cultivation is limited to the islands and foreshores. As the water falls, large mud flats in the centre of the river appear. To these the people transfer their cattle and belongings, build "tukls" and set up shadufs. The soil on these flats is good, and rich crops are produced. As the majority of these islands are not exposed before the month of February, artificial irrigation for the crops is necessary. These quickly ripen under the hot sun, and are, as a rule, harvested in May. The river varies in width from 700 to 2,000 yards. The west bank throughout this reach is fringed with acacias, and, at high Nile, is flooded for a long distance as the left bank is very low and shelving	istrict. P.T.O. Country flat; Danagla Arabs. Road runs through village here about 200 yards from river. Good going, chiefly through sand dunes and scattered bush. E. bank open, high, and sandy. Sand hills come down to the water's edge.
Dazira and El Debeiker	4	63	Old salt works, a mile E. of track.		
El Alaga	7	70	Good camping ground and watering place. For 3 miles track leads through dura cultivation, then good road near river bank	El Alaga district both banks.	
El Gerazi or Garrasa	6	76	... ..	Water channel 2 to 3 miles broad for next 40 miles. Vast quantities of water birds of all sorts inhabit the Nile almost from Khartoum upwards, and large numbers of crocodiles are visible, one or more on nearly every mud bank	Low sand hills with Danagla village of Gerazi to S. of them. People poor, no market. Good meshra. Road runs from here through 3 or 4 miles of dura land $\frac{1}{2}$ to $\frac{1}{4}$ mile from river, then along sand hills near river to Wad Shalai.
Wad Shalai	6	82 132	... ..	... ..	Village of conical thatched houses; banks become drier; series of villages from here along right bank at 2 to 5 miles interval. Road runs for about $3\frac{1}{2}$ miles through sand dunes close to river, then gradually leaves river, and passes through dura ground about $1\frac{1}{2}$ miles from it.

Wad Nimr ...	2	84	A long straggling village and name of the district. Good watering place 5 miles S., the desert road joins the river road. Track runs some way from the river skirting the edge of the cultivation.		
Wad El Zaki ...	5	89	...	...	Large village on top of some sand hills, pop. 400 to 500. From here 3 miles takes one to a few houses about 2 miles from the river on some sand hills called Sayif, one of three villages of that name. Road goes on over cotton soil for 4 miles, then crosses sand hill ridge for about 1 mile and descends to a plain close to river where another village, also called Sayif, is seen 2 miles inland.
El Rahawat ...	1	90	On left bank nearly opposite Wad El Zaki is El Rahawat watering place, good camping ground. Leaving this village the track on desert side of the cultivation should be followed. Three miles on sand dunes are passed on R., and behind them is the canal, some 20 miles long, 500 yards broad and 6 feet deep. (Feb'y.)	Commencement of Tura El Khadra (Green Canal) district.	
Sayif ...	5	95	...	...	Good meshra and ferry to other bank; good building and cultivation. The road from here to Dabasi Meshra is over cotton soil with low scrub on river side.
Tura El Suk and Zif	5	100	Four miles from river ...	...	Zif village. Hashaba a mile to the E.
Dabasi Meshra, or Dobasi	6	106	...	...	Khalifa had big grain depôt here, ruins of which can still be seen. Ferry. Road runs through sand hills $\frac{1}{2}$ mile from river to Dabasi.
Dabasi ...	1 $\frac{1}{2}$	107 $\frac{1}{2}$ 175	Telegraph line to El Obeid branches off here from Dueim line at Minedrib	...	Fair-sized village, 400 to 500 inhabitants on road. From Dabasi to Shabasha road remains close to bank, thence for next 10 miles 1 to 1 $\frac{1}{2}$ miles distant.
Amara and Jebel Arashkol	1 $\frac{1}{2}$	109 175	About 10 miles west of left bank is the high rugged mass of Jebel Arashkol, with several distinct peaks. Volcanic. Chief peak named J. Abd el Daim	Island Manir ... Long, flat, well-wooded island opposite Amara.	Amara village (or Um Arda).

Place.	Miles. Kilometres.		Left Bank.	River and General.	Right Bank.
	Inter- mediate.	From Omdurman.			
Shabasha	3	112	Good camping ground and excellent watering place. Village under spur from main mass of Jebel Arashkol. Track continues through cultivation. Good going	A ferry connects Shabasha El Gharb with Shabasha El Sharg (on the east of the river).	.
Ghobeisha	9	121	... ..	... ..	The road closes to river at Meshra. Ghobeisha village. Good place for camp and watering. Road crosses open plain with high grass; cotton soil; probably under water at high Nile (?)
El Dueim	4	125 201	Town of fluctuating population of about 7,000 inhabitants; disembarking place for El Obeid. Head Quarters of the White Nile Province and residence of the Governor. El Dueim is developing into an important trade centre; large market; principal mart for export Kordofan gum. Substantial Government offices. Starting point of Sudan transport service for El Obeid. The plain all round is open and the locality is fairly healthy. Up-stream from El Dueim some fine strips of cultivation occur along the fore-shore. Behind this belt grows a fringe of acacias, and beyond lies a rolling steppe. Action here 23.8.83; small Egyptian garrison repulsed Mahdists.	Channel narrows to 1 mile or less	Road opposite Dueim leads to Maatuk, Managil, and Wad Medani. The east bank is covered with low bush and a little cultivation. Track leads N.E. (20 miles) to Maatuk.
Hassania Island (N. end)	5	130	... ..	Island (sometimes under water)	Half a mile on Meshra Ghayafa. Good camping ground and watering place; sandhill near Meshra. Sand fairly thick; cotton soil.

Denegila	...	5	135	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Village west of road opposite island of same name, chief village of which is Mahbale. $1\frac{1}{2}$ miles further is village of Abu Gurun, north of road where it crosses track to Um Saneita. Dura crops in this district.
Um Gar	...	3	138	Um Gar village. Good watering place and camping ground. Track leads 5 miles to opposite Kawa, through bush and trees	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Um Gar Island.
Meshra El Hella	...	5	143	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Thick bush close to river to Meshra El Hella. Road runs close to river to Kawa.
Kawa	...	3	146 235	Wad Abu Rul, opposite Kawa. Thick bush and trees on banks. Gum depôt belonging to Kordofan province.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Large village, 500 inhabitants. Residence of British Inspector and Mamur. Wooding station for steamers. Post and Telegraph Office. Road hence to Sennar. Kawa is built on high land and bush is open all round it. Inhabitants mixture Jaalin, Hassania, and Dana-gla. The houses are mostly round with thatched conical roofs. Large market, neat Government offices. Boat building has been started; ferry. Track from here northwards (31 miles) to Ma'atuk. The road runs $\frac{1}{2}$ mile from river through dura cultivation, and then over grassy plains past villages of Abu Hindi and Fum Omer to Shaggara.
Lakadawia	...	—	—	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Wooded island close by, with north end opposite, Kawa; about 4 miles long; richly cultivated with a variety of crops, comprising wheat, barley, onions, lubia, bamia, and dukhn. Above this the forest belt covers both banks of the river, and is often flooded for a great distance on either side
Meshra Shaggara, Kenuz	...	8	154	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Meshra and village close to river, thence past Kenuz with island opposite. The road runs $\frac{1}{4}$ to $\frac{1}{2}$ mile from river. Hassan Allob on banks with village called Dabus opposite, still through dura country to Nur El Daim.
Hassan Alob and Dabus	...	2	156	Village.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Large village and police station; 1 mile distant from river.
Nur El Daeim	...	3	159	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Watering place. Road now leads through dense bush; river unapproachable till Um Turan.
Khorr Gusab (?)	...	1	160	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Tomb of Sheikh Nur El Taib; three large trees, ruined mud and brick buildings and some flags mark it. Road bends due south to Shawal.
Sheikh's Tomb	...	...	162	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

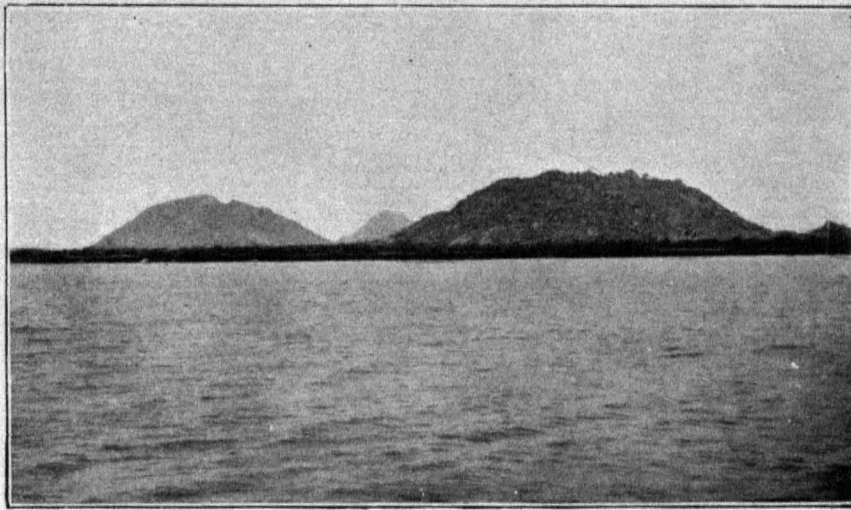
Place.	Miles. Kilometres.		Left Bank.	River and General.	Right Bank.
	Inter- mediate.	From Omdurman.			
Shawal, Abu Lahm, and Aba Island (N. end)	1	163 262	Abu Lahm at point of curve ...	North end of Aba Island. Take western channel. Island cultivated in places, some 27 miles in length, belt of trees along river's edge, but interior only thinly wooded. Higher at south than at north end. Inhabited by a few Shilluks. From this point the character of both banks changes. The sand dunes seen lower down the river have been gradually disappearing, and black cotton soil now comes down to the water's edge, which is fringed at low Nile by reeds, and by bunches of sudd which have floated down from the Bahr El Jebel. Beyond the fringe of are what are at high Nile grassy swamps, but at low Nile are dry and excellent grazing grounds. Behind this swampy ground is a belt of fine sand and other acacias. From here to Jebelain at low Nile thousands of sheep and goats and herds of cattle are seen grazing on either bank. These belong to the tribes living inland, where at this time of year water and grazing is scarce.	Village right. Three conspicuous single hills (Jebel Tuema?) about 20 miles south-east and a fourth peaked hill rather south of these (Jebel Buyut?). Country on right open bush, slightly undulating, good sandy watering places on river.
Um Turan ?)	...	2	165	Watering place. Road improves; good going along bank till Fachi Shoya.	
Malaha	...	1	166	...	Meshra Malaha and village Malaha; salt works. Road enters scrub; bush country to Marabia.
Marabia	...	8	174	...	Action 29.4.83; Hicks Pasha defeated Dervishes. Good camping place on high ground, where there are ruins of an old fort and brick buildings. Road leaves river, crosses a grassy plain, probably under water at high Nile, past village Torba (186) east of road, and turns towards river.
Mahdi's Place	...	1	175	...	Large tree on river bank; ruins of mud houses.
Fachi Shoya...	...	1	176 283	Starting point for Sherkeila and South Kordofan. Country open. Good camping and watering place. Village deserted. Base of two expeditions in 1899.	The banks on both sides now begin to be fringed with reeds, the strip extending gradually in width from a few yards to 400 or 500 yards. Behind this are fine sand trees, etc.
Hesai Island	...	2	178	Thick trees and bush, up to 1½ miles in width, commence	Between Aba Island and right bank. Mangara village on Aba Island.
El Alob	...	7	185	Village; track leads S.W. to Gedid (33 miles).	
Zeinuba and Aba Island (S. end)	6	191	...	El Khema district both banks. Shilluk village at south end of Aba Island.	"Manjera" (boat yard) of Zeinuba under clump of large trees.

Goz Abu Guma and Wurelat Island	1	192 309	Track leads S.W. (32 miles) to Gedid Gum collecting station on L.B.	Wurelat Island, opposite Goz Abu Guma. Large grass islands make their appearance in the river (January). The eastern channel opposite Goz Abu Guma is shallow, and dries up at low Nile, when a landing has to be effected either 2 miles above the town or on the west bank of the island opposite the town.	Headquarters of district of that name. Telegraph and Post Office. The telegraph line from Sennar (Blue Nile) across the Gezira reaches the White Nile here and continues southwards. East bank heavy grass with a few acacias. The east channel here is some 500 yards wide. The north and south road runs $\frac{1}{2}$ to 1 mile from river. Line of villages on high ground $4\frac{1}{2}$ miles from river. Good grazing; 400 inhabitants; Tukls. Little trade. Greek merchants have collecting station during the gum season on the left bank, which belongs to Kordofan.
El Khema	7	199	...	...	Road joins river at El Khema Police Post. Many birds and monkeys.
Abbassia Gedida (Black Colony)	1	200 322	...	...	Colony of old Sudanese soldiers. East bank reed strip thinner than west.
Abu Zeid	8	208 333	Abu Zeid village. Bank continues fringed by several hundred yards of reeds. Baggara Selim country begins; sparsely inhabited, with thick bush and trees behind. Good game country begins	Passage only practicable at low water. The Abu Zeid ford is a most serious obstacle to navigation. At this point, for a length of some 4 miles, the river spreads out in a broad and extremely shallow sheet, at low Nile about 1,200 yards in width. Upon the bed, masses of what are called "fresh-water oysters" collect. The broken shells form, with a shingle, a kind of "conglomerate," almost as hard as rock, and which nothing but a specially adapted dredger could remove. In March and April, in very low years, the depth of water here is in places not more than 1 foot 5 inches to 1 foot 8 inches. The forest is very thick on both shores, and on the west a wide belt of swamp and grass renders landing very difficult. The papyrus reed is first seen at this place, and occasional ambach. Floating patches of <i>sudd</i> are met with in the channel, as well as many permanent large grass islands, the largest being those of Nuago and Musran. Hippopotami begin to appear in considerable numbers	Police Post, east bank. Scattered trees and bush, 1 to $1\frac{1}{2}$ miles in width, commence again.
Masran Island (N. end)	1	209	...	North end of island. East channel often much blocked with <i>sudd</i> ; only a narrow passage of 50 yards being visible at times. Island thickly wooded	Road keeps close to river bank.
Danko Shush ...	4	213	...	...	Shilluk village.
Azalet Rocks ...	9	221	...	Rocks across main western channel. Dangerous at low Nile.	
Danko Selim ...	6	227	...	Shilluk village on Masran Island. Rocks in middle of stream; dangerous to navigation, especially at night. Here the reef runs right across the river channel, and the only method of passing safely at low water is to steer a course like the letter S. Many of the rocks are below the water surface, and their presence is only indicated by the ripples which they cause.	

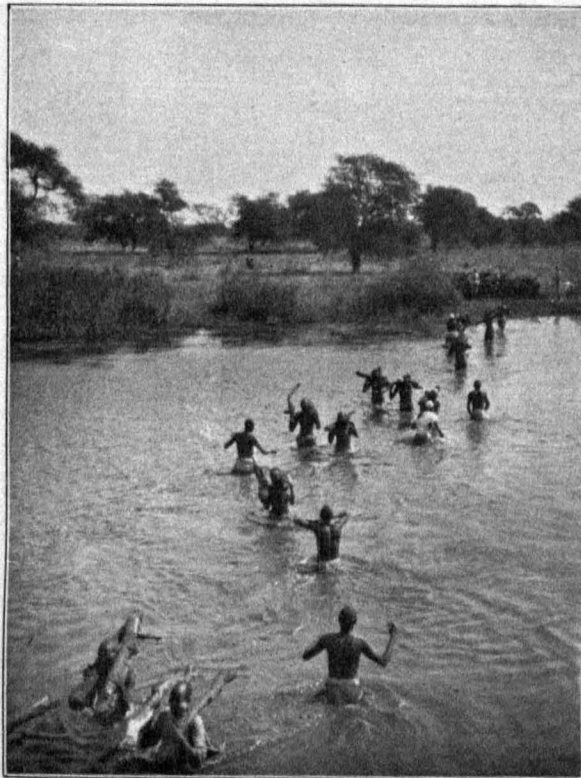
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	Inter- mediate.	From Omdurman.			
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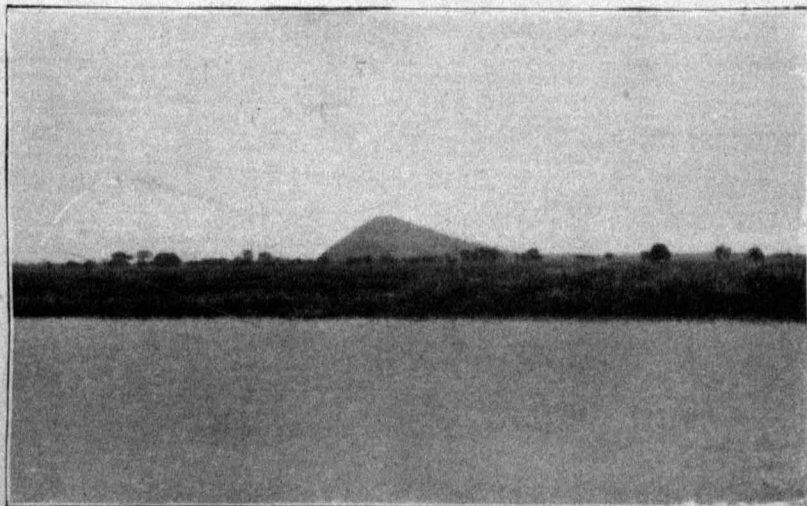
Place.	Miles. Kilometres.		Left Bank.	River and General.	Right Bank.
	Inter- mediate.	From Omdurman.			
Meshra Zubeid ...	4	231	...	...	Meshra to Masran Island. Hence road winds through thick scrub, with patches of open country, to the ford at Jebelein.
Masran Island (S. end)	5	236	...	Shilluk village at southern point. Careful navigation necessary	The boundary between the White Nile and Upper Nile Pro- vinces belonging itself to the Upper Nile (Kodok) Province. Jebelein is easily recognisable by the five peculiarly-shaped granite peaks which rise ab- ruptly from the plain on the eastern shore. The highest of these peaks is perhaps 600 feet. The nearest is 1 mile from the river, and the farthest 3 miles. They form an amphitheatre of rocky hills; two distinct masses, with a third hill to the east of the northern mass. Grassy plain between north and south ridges. Village on east of south ridge. The forest on the east bank is about a quarter of a mile in width, and extremely thick. Behind it stretches an end- less expanse of prickly grass, some 3 feet high, interspersed with clumps of mimosas. Lions and Tiang fairly plentiful. The soil is light and friable, and much of it must be flooded during the rainy season. One or two ravines serve as drains to this area. The ruins of Ahmed Fedil's "Deim" are still visible here. This tract once formed part of the Dinka country, but is now quite uninhabited, most of the Dinkas having migrated to the south to escape the raids of the slave-traders. At this point the "serut" fly makes its first appearance, and remains an unwelcome guest
Jebelein ...	2	238 383	Two roads lead north-westwards from opposite Jebelein to Gedid, etc. Baggara Selim live on left bank	River about 500 yards wide; rocks showing in places. Up-stream of Jebelein, for many miles, the country is most dreary and monotonous. A fringe of forest on either bank marks the higher land. Between this the river winds through reedy islands, masses of swamp grass and floating weed. A series of islands now begins. Dinka country right.	



JEBELEIN.



WOODING STATION NEAR GOZ ABU GUMA.



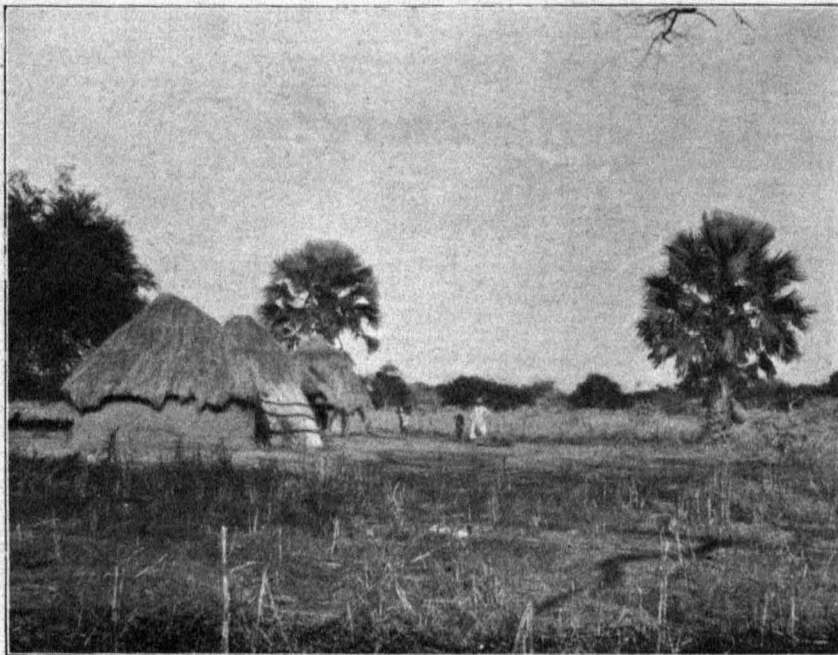
JEBEL AHMED AGHA.

Place.	Miles. Kilometres.		Left Bank.	River and General.	Right Bank.
	Inter- mediate.	From Omdurman.			
					throughout the journey to Kodok. This brown fly, which is about the size of a small wasp, has a sharp stab, and if allowed to settle speedily draws blood. Not poisonous. Road 200 to 400 yards from river. Massacre of Egyptian troops by Mahdists in 1882.
Meshra Sherif ...	3	241	...	...	Meshra and camping ground good; name applies to country for next 2 miles. Road runs through thickish thorn jungle; path good.
Bulli Island ...	6	247	...	North end of Bulli Island. Western channel 100 yards broad; eastern one bad. Narrow island 100 to 200 yards wide, covered with grass and rushes	Path keeps close to east channel, which is nearly dry in April and May.
Debba* El Goda ...	12	259	...	Western channel bad.,	Sheikh's tomb. Large range of hills west. Pointed peak about 30 miles east. Perhaps Abu Gurud (?).
Gamus ...	17	276	...	South end of Bulli Island. Western channel about 80 yards broad.	
Karshawal ...	2	278	...	...	Small Selim village, with old camp inland 2 miles to south-east. Selim and Dinka Meshra.
Agaug ...	18	296	...	...	Selim and Dinka villages about 3 miles inland.
Renk ...	2	298 479	...	Thick forest on both banks. From Renk to Ahmed Agha there is no change in the monotony of the scenery. The west bank is very flat and low, and the east bank is covered with thorn jungle, plenty of trees and heavy grass	Road closes to river. Headquarters of Renk District. Government offices and residence of British Inspector. Good sandy meshra, open ground for camping large force. Telegraph and Post Office. Inhabitants, Dinkas and Selim Arabs, who own sheep, goats, and the former cattle. Thick forest. Mosquitoes very troublesome here after sunset. Action here 15.9.98. Dervish "deim" bombarded and taken, and a steamer captured. Track to Gule and Roseires branches off here (<i>vide</i> Vol. 2).
Khor Deleib ...	2	300	...	The river is fringed with a belt of reeds on either bank, varying from 10 to 200 yards broad. Thick forest	Road leads south-east to Khor Deleib and runs along an

Warrit, or Loingwin, and Dabba Dungit	10	310	...	...	...	...	...	both sides. Much bird life. There is a ford across both channels here (Ahmed Fedil crossed in 1898), but it is rarely practicable except at low Nile, and not always even then. Northern end of Wad Dakona Island; take western channel. A few Shilluk villages on this island formed by White Nile and Khor Gaza El Abiad. This khor at high Nile is probably 300 to 600 yards wide, but at low Nile nowhere more than 300 yards; fordable nearly everywhere. Many wild-fowl on it	eastern branch of the Nile named Gaza El Abiad. Village of Sheikh Bakhit Niok (released slave from Cairo). South of here people mostly Selim Baggara, living in temporary encampments: about 1 mile inland for grazing.
Um Hedeida	10	320	...	...	...	...	...	Khor decreases till at Um Hedeida water stagnant and in small quantity (February). Elephants drink here regularly, but only at night. They pass the day about 20 miles inland in a forest of dense kittr bush which the Arabs call their "beit" or house.	Track follows eastern bank of khor. Country covered with 3 feet high grass where not burnt. Scattered bush "Heglig" and "Hashab"; no cultivation. Water reappears in khor. Selim encampments east of track.
Leungtom (D), or Domaia (or El Wat (A))	6	326	...	...	...	...	...	South of Wad Dakona Island	Meshra. Road approaches Nile for first time since Renk. About 1½ miles inland are villages of Kolang El Wat under Sheikh Salem Banga (also released slave from Cairo). Country fairly open. Track follows east bank of a khor. On west of track is a fringe of thick "tali." To the east country is fairly open.
Debba El Zawia or Zawa	5	331	Dom Palms on left bank as well as on right	...	...	...	...	Two islands, western channel 80 yards; shallow at low Nile	Commencement of Nabagaia District. Island. Swamp grass and trees. First "dom" palms are met here.
Anok...	4	335	...	...	...	...	...	...	Village of Agweim Dinkas passed about ¼ mile to east on slight elevation. Thick "tali" bush on either side of track. Village depends on river for water.
Debba Ibrahim Sharak	9	344	...	...	...	...	...	...	Tereiba or Allal (D) district commences. Shade and good water in khor. Good midday camping ground. Jebel Ahmed Agha visible. From here on bush unpleasantly thick. Elephants and much game.
El Ragal (A)	1	345	...	...	...	...	...	...	Track branches off east to Dinka village or district of Kash
Senagul (D)	4	349	...	...	...	...	...	...	Kash (10 to 20 miles from river?). Bush ceases to annoy. Elephants drink here.
Debba Abu Teiba	1	350	...	...	...	...	...	...	Two main khors, Sangeir (or Rau (D)) and Mesangeir (or Balantega (D)), from the Abyssinian hills near Kirin (?), join the river here. Difficult to cross July to November.

* A Debba is a low mound, generally the site of an old or existing village.

Place.	Miles. Kilometres.		Left Bank.	River and General.	Right Bank.
	Inter- mediate.	From Omdurman.			
Meshra Meteima (Selim)	2	352	Meshra on left bank.		
Jebel Ahmed Agha (or Biba (D))	1	353 568	Western channel best; 70 yards. Matmar district com- mences; then Mohadan Zeraf	... ..	A solitary hill, 250 feet high and 250 yards from east to west along its crest; great land- mark; volcanic; a few small trees to summit; stands 2 miles from the bank. From its summit is seen a vast tract of trees and grass broken by khors and swamps. J. Ulu and Gerait visible 60-70 miles to the east. No break in the level. Much game. Several Dinka and Selim villages in neighbourhood, but in rains the Dinkas retire in- land, and the Arabs to districts north of fly limit. Dinka Sheikh Jok. Many "dom" palms around the Jebel. Water is obtainable from Khor Biba. It is 1 mile east of river, which here bends south-west. About 22 miles south-south-east of the Jebel, on the Khor Mesan- geir, lies the village of Akorwen in a large grassy plain. There is a track up K. Rau to Awitong and several other Dinka rain villages. Thence track goes to J. Ulu and Gerait, thence to Kirin or J. Jerok.
Edor Gamoia ...	4	357	Much game: buffalo, etc.	... Shilluk village on north end of Gezira Wad Beiker ...	Opposite this island, for about 6 miles, extends the district of Heglig or Tau.
Gamus ...	6	363	... ..	Shilluk village on the island. The sheikh, after whom the village is named, is a refugee from Cairo.	
Dabba Marbeit or Shakab	1	364	... ..	... ..	Opposite south end of Wad Beiker. A grand game country.
Kwe ...	2	366	... ..	... ..	A Dinka Farik.
Alumbal ...	1	367	... ..	... ..	Sheikh Ajak's village. Country round is fairly open, scattered "kittr" and "naal" grass. Both these villages are under Sheikh Salem Banga of El Wat. Track south-east to Akorwen, 22 miles.



AKUNERE, SHILLUK VILLAGE.



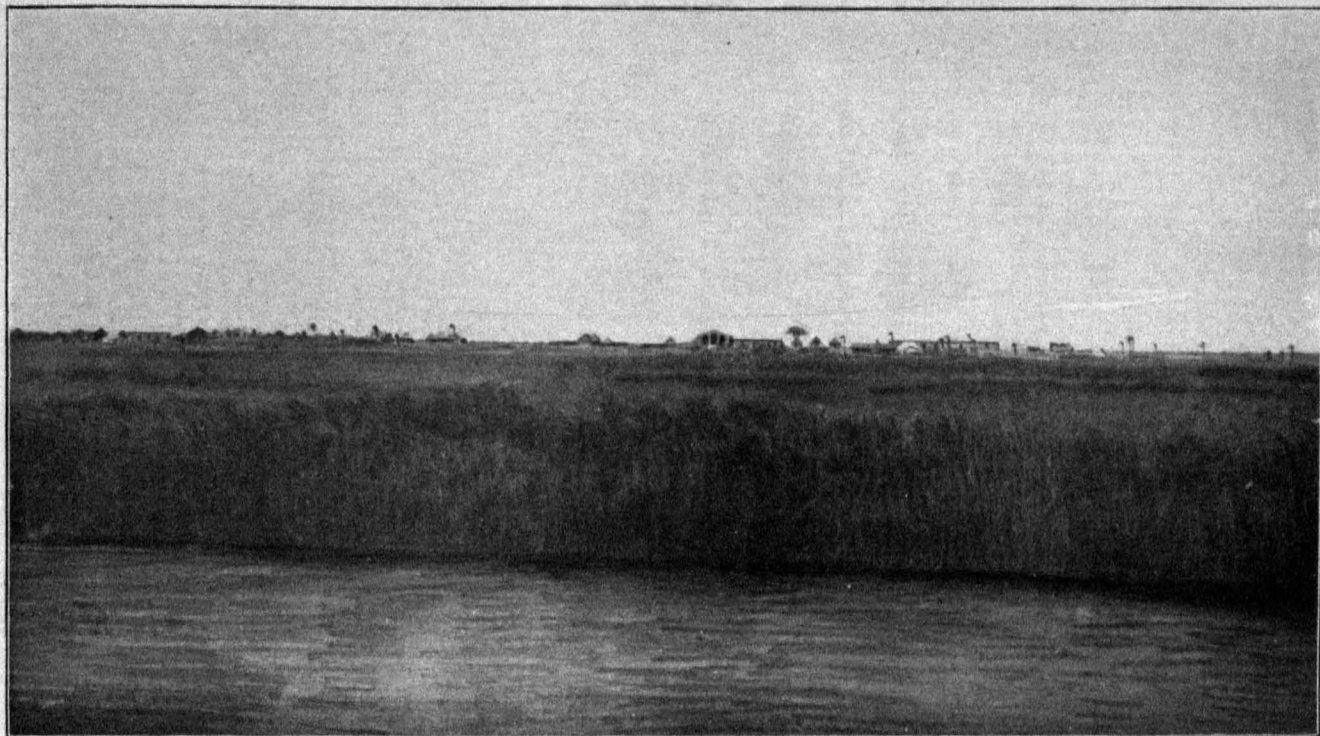
SHILLUK MAIDEN WITH HOUSEHOLD UTENSILS.

Place.	Miles. Kilometres.		Left Bank.	River and General.	Right Bank.
	Inter- mediate.	From Ondurman.			
Meshra Zeraf ...	1	368	Meshra on left bank also ... ..	... ..	The meshra extends for about 2 miles, the road skirts the river and crosses a wide shallow khor called a "far-legh" or "rigl" by the Arabs. It is said to come from near Aturuk.
Rom or Um Gursan	4	372	... ..	... ..	Dinka village named Rom, under Sheikh Jok. The district for the next 8 miles is known by the Arabs as Um Gursan. The track from Renk to here is, as a rule, excellent, but from here to Kaka bad; passing over hard-baked, badly cracked cotton soil. Splendid game district on both banks.
Ardeib El Miriam ...	6	378	Ardeib El Miriam district on west bank ... ..	... ..	District of Tereiti begins.
Meshra Rom or Tereiti	2	380	... ..	... ..	Telegraph line passes here. Ageir district.
Fil and Ajak ...	3	383	... ..	... ..	Ageir Dinka villages. Track about 1 mile from river. Country open with patches of bush here and there. Track goes further from river; at knoll called Debba Shagerab road bends westwards and crosses a marshy (in rains) plain to Debeik, Sheikh Akol's village, about 1 mile from river opposite Kaka.
Kaka and Debeik ...	11	391 634	Kaka is one of a collection of Shilluk villages spread along several miles on the left bank, 400 yards from the river. From this point southward, the villages on the western bank of the river are continuous. They cluster along the ridge and behind the forest. In front of them extends a broad belt of swamp, mostly dry at low Nile, varying in width from a few hundred yards to over a mile. Landing at any point along this reach is impossible except at low Nile. The marsh	Many grass islands block the river channel, which averages from 300 to 400 yards in width. Near Kodok these grass islands occur in constant succession, and on the west bank a double line of Shilluk villages is to be seen—the one on the edge of the swamp, and the other further inland. Landing can only occasionally be effected on either bank of the river	On the eastern bank the swamp is perhaps 500 yards wide behind it the eternal belt of forest. Outside of this again stretches an endless plain of high grass dotted with clumps of trees. This side of the river is quite uninhabited, except by a few Shilluks who cross the river for the purpose of hunting or fishing. Occasional big khors run into the Nile on the eastern bank. These depressions run for many miles inland, and their banks are covered with a thick growth of thorny trees.

Ajok ...	3	397	is very deep, and covered with thick grass and reeds, through which nothing but hippopotami can force their way		Skirting an open marshy (in rains) plain on right and following line of trees on left Ajok (Dinka village) is reached. Tracks now become numerous and ill-defined; the one followed led across an open marshy (in rains) plain to the Nile, 2 miles north of Kaka Wood station.
Kurwa district ...	5	402	Road starts from here to Fungor (Mek Bosh-Nubawi) (41), and J. Gedir (71 miles). No landing place.		
Kaka Old Wood Station (1902)	2	404	...	The river now curves to the west and then to the east ...	Known as Hellet El Nyam-Nyam, close to river bank; wood station. Much game here—waterbuck, lion, cobus leucotis, &c.
El Gerab ...	7	411	Village. Marshy banks; a few trees	...	The country in the bend the river forms is called Gerab El Aish (bread-bag?).
Melut ...	2	413	...	...	Telegraph station, Government buildings, and residence of police officer. Line crosses river to west bank. Track leads from here to Kirin, on the Abyssinian frontier.
Demtemma ...	3	416	Shilluk village left. Sheikhs Kodak and Tak	...	Demtemma Small village 700 yards from bank. Headquarters of district officer.
Sheikh Delal ...	2	418	Unapproachable by steamers at high Nile; a string of villages now extends, 1 to 2 miles inland, along the west bank for many miles.	...	Sheikh Lowir (D) village two hours inland east.
Sheikh Nyekeia ...	31	449	His villages extend for the next 10 miles.	Floating islands frequent. Western channel 200 yards	Dinka villages right bank; but not so numerous as Shilluks on left bank.
Kodok* ...	10	669 459 738	Up narrow backwater on left bank. Position 9° 53' longitude, 32° 8' latitude. Height, according to Austin, 1,300 feet. Date palms. At low Nile a steamer cannot get up the backwater, and has to discharge on the east bank of the peninsula forming the backwater. The latter has then to be crossed in boats. Headquarters of the Province. Telegraph station and post office. Government buildings, brick stores, zinc roofed.	Country on each bank open grassy plain, with bunches of big trees, resembling a park	A track leads south from opposite Kodok to Uryong on the Sobat, about 40 miles. Three wells at Dunjol, 13 miles south. Open grassy country most of the way, up to within 7 miles of Uryong, when thick thorn bush continues to the river. Scattered Dinka villages at intervals.

* The native name for the late Fashoda.

Place.	Miles. Kilometres		Left Bank.	River and General.	Right Bank.
	Inter- mediate.	From Ondurman.			
Kodok—continued.			Native village 600 yards to west, with a few shops, where small requirements, such as sardines, cigarettes, etc., can be purchased. Trade goods popular in these parts can be procured here. Garrison of two companies. Marchand's garden, etc., kept up. His expedition arrived here June, 1898; attacked twice by Dervishes. Anglo-Egyptian expedition arrived 10.9.98. French evacuated December, 1898. Was in the old days a considerable trading station. Climate unhealthy July to October. Millions of mosquitos.		
Lul	18	477	Austrian Roman Catholic Mission Station. Flourishing garden on bank. Station 600 yards inland. Staff of about five fathers and three sisters.		
Taufikia	34	511 822			Station second in importance in U.N. Province. Headquarters of a Sudanese battalion; 300 inhabitants; Mamur; deleib and dom palms, also acacias; Old Government post under Ismail. Sir S. Baker's headquarters in 1865, etc.; "Baker's Tree" still remains. Fairly healthy site, but little trade. Country in rear marshy, but never flooded. White ants bad. Good landing place. Proposed site for a dockyard (1904).
Sobat River... .. [The river between the Sobat mouth and Lake No has not yet been accurately surveyed. The figures given in this portion must, therefore, be accepted with caution.]	5	516 830	Village left opposite junction. Sheikh Luong	River channel bends gradually due west. Average breadth at Low Nile 150 to 300 yards. Numerous islands and backwaters in places	Mouth of River Sobat or Bahr El Asfar. Yellow river, 80 to 150 yards wide; well defined banks; current of cream-coloured water three miles per hour. Almost at the junction, on the left bank of the Sobat, is the (deserted) fort built in 1898. This point was reached



KODOK.

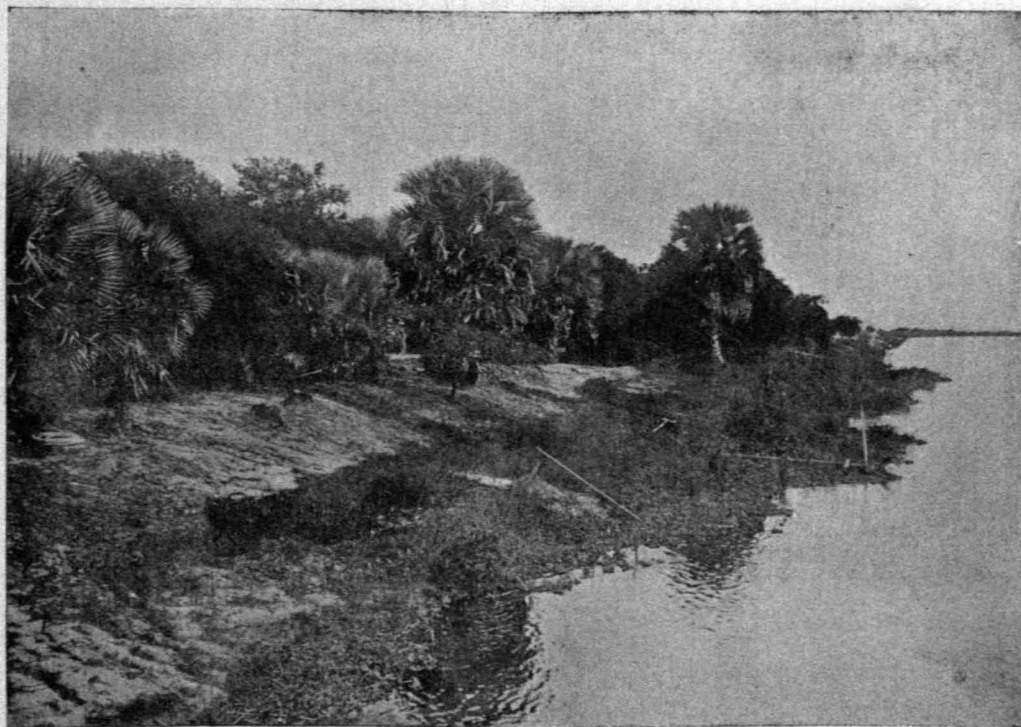


ROMAN CATHOLIC MISSION STATION, LUL.

Place.	Miles. Kilometres.		Left Bank.	River and General.	Right Bank.
	Inter- mediate.	From Omdurman.			
Finidawi	—	—	The left bank is still studded with a chain of Shilluk villages standing about a mile from the river. The intervening space is covered with long grass, but open in places, with stunted solitary trees. Much game.		from Abyssinia by Colonel Artomonoff and Messrs. Faivre and Potter ten days before the Marchand mission passed (vide p. 141). Seven miles up the Sobat on its north bank, and six miles across southwards from Taufikia, is the American Protestant Mission Station of Tatûg or Deleib (amid a grove of deleib palms "tuga"). Flourishing. Shilluk neighbourhood.
Khor Attar	1	517	...	...	Wooding station; good landing place; swampy inland. Khor running in from due south. Trees and grass, ambach, &c.
Tonga	4	521	...	East end of Tonga Island begins. Very low; annually covered by the flood. Width from one to two and a-half miles. At low Nile the channel separating it from the mainland is dry at the western end. The eastern part of this channel is termed the River Lölle or Fanakama. At its eastern end it is 80 yards broad and about three feet deep (in April); it is doubtful whether it is a river at all; but it has been reported to come from the Nuba hills. It was explored by Marno in 1880 for about 32 miles, and by Colonel Sparkes in 1899 for about 28 miles (stopped by sudd). A branch from the Lölle forms the western part of the channel referred to.	
Gabt El Megahid ...	5	526	...	...	Formerly a base camp for sudd cutting parties.
Shakwa El Shilkawi	5	531	...	...	Shilluk villages—group.
Bahr El Zeraf ...	16	547 880	...	Western end of Tonga Island ...	Mouth of the Bahr El Zeraf; 38 yards broad; little or no current; 19 feet deep (low Nile).
Maya Signora ...	53	600	...	...	A large lagoon (explored by Mlle. Tinné (Dutch) in 1863), over 500 yards wide, extending for some distance alongside the river. Likely place for sudd to collect. Connects with Bahr El Jebel, 13 miles up stream of Lake No.
Lake No	12	612 985	...	Entrance to Lake No. Mouth of the Bahr El Jebel. For description of Lake No vide p. 165.	

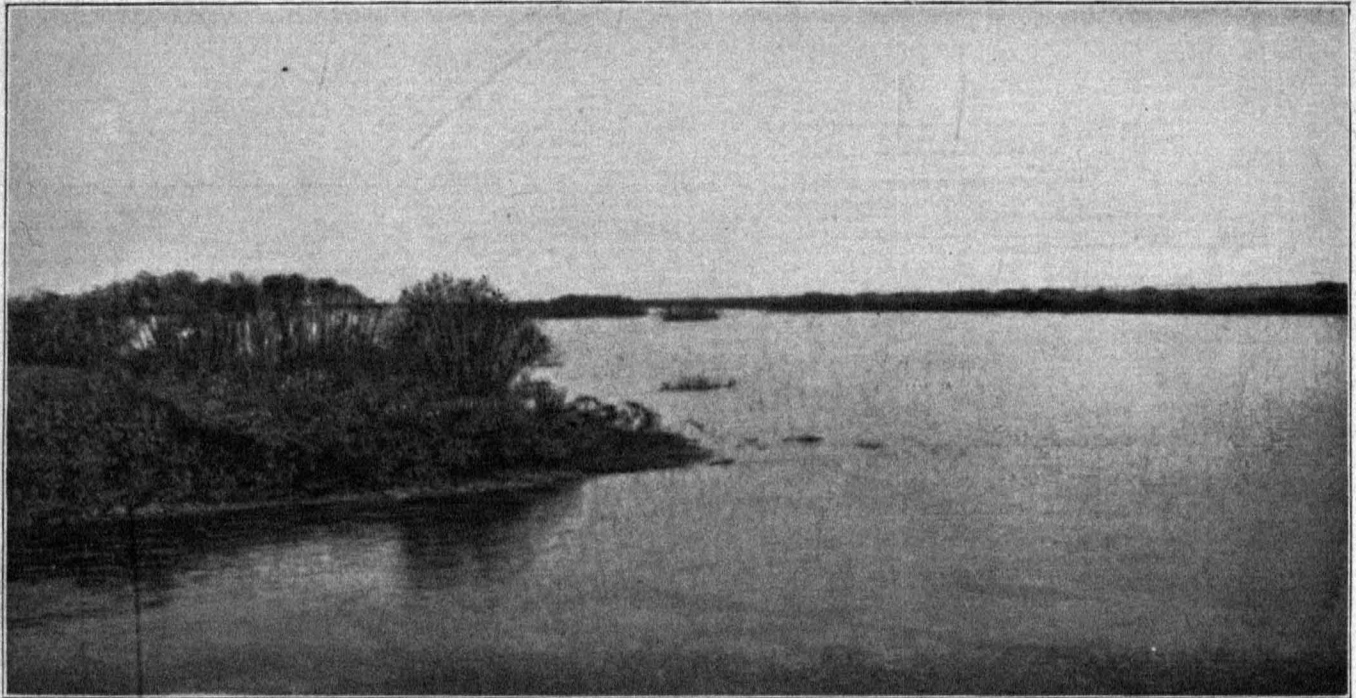
RECAPITULATORY TABLE OF DISTANCES.

	Intermediate.		From Omdurman.	
	Miles.	Kilometres.	Miles.	Kilometres.
J. Auli	28	45	28	45
Geteina	55	88	55	88
J. Arashkol	54	86	109	175
Dueim	16	26	125	201
Aba Island	38	61	163	262
Fachi Shoya	13	21	176	283
Goz Abu Guma	16	26	192	309
Abu Zeid	16	26	208	333
Jebelein	30	48	238	383
Renk	60	96	298	479
J. Ahmed Agha	55	89	353	568
Kaka	41	66	394	634
Demtemma	22	35	416	669
Kodok	43	69	459	738
Taufikia	52	84	511	822
Sobat River	5	8	516	830
Bahr El Zeraf	31	50	547	880
Lake No... ..	65	105	612	985

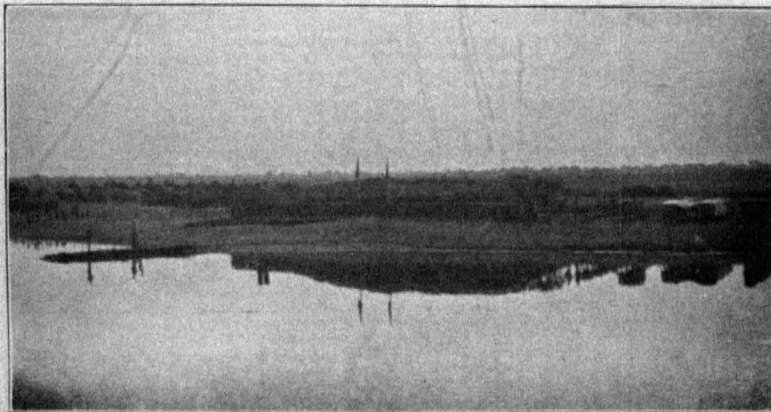


TAUFIKIA.

Kodok—Lake No.



LAKE NO.



SHAMBE.

SECTION 4.—LAKE NO TO GONDOKORO.

Place.	Miles. Kilometres.		Description.
	Inter- mediate.	From Lake No.	
Bahr El Jebel ...	—	—	For description of Lake No, <i>see</i> page 165. For the Sudd, <i>see</i> Appendix B.
Ex block* No. 1 ...	1	1	For detailed description and maps of the Bahr El Jebel between Lake No and Gondokoro, <i>see</i> Sir W. Garstin's Report (Blue Book, Egypt, No. 2, 1901, price 3s. 6d.), from which much of the following is taken; also <i>see</i> his Report of 1904 (price 17s.).
" " 2 ...	8	9	The entrance to the Bahr El Jebel is about 150 yards broad at the extreme east end of Lake No. The channel, turning suddenly to the south, is bounded on either side by a dense perpendicular growth of rich green papyrus swamp, in which ambach trees, and <i>um suf</i> and convolvulus occasionally appear. The papyrus reaches from 10 feet to 15 feet above the surface of the water (Jan.). As the steamer proceeds in its winding course, the channel varies from 70 to 100 yards, whilst the breadth of the papyrus strip varies from a few hundred yards to several miles. The solid ground (at its best only a few feet above the level of the water) on the far side of the papyrus gradually recedes, and the trees in the distance become more and more sparse, till at last they vanish altogether. Except in occasional instances, no dry land is to be seen throughout these swamps. Their extent is unknown, but, more especially to the west of the river, it must be enormous. In all probability the greater portion of the region lying between the Bahr El Jebel and Bahr El Ghazal and its tributaries is, in the rainy season, a vast marsh. To the east their area is more limited, as the country beyond the Bahr El Zeraf gradually rises into alluvial plains, covered with dense grass, and intersected by numerous swamp lines. These plains, as a whole, are above the level of the Nile when in flood. In the long island, lying within the loop formed by the Bahr El Zeraf with the main stream, there undoubtedly exists a ridge of comparatively high land. Upon this a Nuer population has settled. Except by occasional glimpses of trees, and, more rarely, of a village, it is impossible to trace this ridge. Its limits are undetermined. It is surrounded on every side by a belt of almost impassable morass. The only evidence of human beings are the grass fires on the horizon, and, except for an occasional elephant, buck, or giraffe, visible in the far distance from the top of the steamer, and a few water-birds, bee-eaters, wagtails, &c., animal life appears to have suddenly become extinct. At sunset, however, thousands of insects make their appearance, but, with the exception of the mosquito, who is always <i>en evidence</i> to a greater or lesser extent (worst from April to November (during the rains) and least from December to March—dry season—grass fires), they vanish after an hour or two.
Discharge (14.4.00) 218.95 c.m. per sec.	1	10 16	
Ex block No. 3 ...	6	16 26	
" " 4 ...	21	37 59	
" " 5 ...	14	51 82	
" " 6 ...	4	55 88	
" " 7 ...	3	58 93	
" " 8 ...	6	63 101	
" " 9 ...	3	66 106	
" " 10 ...	1	67 108	
Ex block No. 11 ...	5	72 116	The water of the Bahr El Jebel is dark-coloured, but contains little or no sediment. The depth of the main channel varies from 20 to 24 feet at low Nile. As far as mile 40, the ridge lying between the Zeraf and the Jebel is visible on the eastern bank, at a distance varying from 500 to 3,000 yards. Trees and a few palms appear to indicate the presence of villages. From this point the ridge disappears and the swamps stretch to the horizon upon both sides of the river. The first four of the sudd blocks, cleared by Major Peake's party, occurred within this distance. The fifth, sixth, seventh, and eighth blocks were met with between miles 50 and 63. Upstream of mile 63, the character of the marsh changes. North of this point comparatively few open lagoons are to be seen, but from here, until Hellet-el-Nuer (mile 139) is reached, these shallow lakes border the Bahr El Jebel in continuous lines. Some of them are of considerable area, as a reference to the map will show. They form nurseries for the growth of water plants, and are the chief cause of the blocks which form in the channel. Their depth rarely exceeds 3 feet. As the river is ascended, these lagoons increase in number and size. The channel often passes between two of these lakes, only separated from them by a belt of papyrus. In winter these lagoons are open spaces of water, but, with the advent of the rainy season (in the month of April), their surfaces become covered with detached masses of floating vegetation. Many of them are connected by a series of openings with the river, and their water level rises and falls with that of the latter. The loss of water, by evaporation, upon these shallow ponds, must be extremely great. It is difficult to say whether these lagoons are old courses of the Bahr El Jebel and long since filled up, or whether they are traces of the vast lake which, it is imagined, once covered this area. The latter supposition appears to be the more probable, as the channel of the river is so deep and so sharply defined that it appears hardly possible that it should have utterly disappeared. On the other hand, there is at least one instance where the river is actually in process of vanishing, <i>i.e.</i> , between miles 143 and 165. In this reach the channel is filled with decomposed sudd to such an extent that it is difficult to trace
" " 12 ...	3	75 120	
" " 13 ...	4	79 127	
" " 14 ...	3	82 132	

* *I.e.*, where the block formerly existed.

Place.	Miles. Kilometres.		Description.
	Inter- mediate.	From Lake No.	
Discharge (1.4.01) 362 c.m. per sec.	10	92 148	it. It is reasonable to suppose that, unless cleared, it will, in course of time, disappear and be transformed into a series of "mayas" or lagoons. These "mayas" are constantly changing their shape. New channels burst into the river and others fill up and disappear. The average level of the marshes, in March and April, 1901, was from 7 inches to 1 foot above the river water surface. Between mile 65 and Hellet-el-Nuer, the width of the river is very variable; in many places it is only 60 yards and in others as much as 150 yards. The general average may be taken as from 75 to 80 yards, and the mean velocity of the stream at 2 miles an hour, at low water. The depth ranges from 15 to 22 feet, but in places is as much as 28 feet. The sudd blocks 9 to 14 were met with between miles 65 and 82. At block 14, what may be termed the first series of sudd obstruction ended, and with its removal, in April, 1900, through navigation between Khartoum and Gondokoro was restored. The worst place in the river, in the way of giving trouble, was block No. 10, at mile 67.
2 deleib palms. (W.)	16	108	From this point land approaches the river on both banks, that to the east being less extensive. Trees 5 miles to east.
3 deleib palms. (E.)	5	113	
Trees... ..	12	125	
Hellet El Nuer	14	139 223	At mile 139 from Lake No, Hellet El Nuer (or Aliab Dok) is reached. It is rather a pretty landing-place with stretches of short turf; no huts or inhabitants. The latitude at this place is 8° 4' 36" North, and at this point the high land touches the west bank of the Jebel and stretches in a broad expanse to the horizon. The bank here is 3 feet above the water, but the land rises at a short distance from the river. This plain is evidently never swamped, even in flood. It is covered with a growth of deleib palms, Euphorbia, and bush. It commences at mile 131, and continues along the river as far as mile 144, with swampy intervals at the loops.
Captain Gage's channel	—	—	At Hellet El Nuer itself, a branch of some size takes off the Bahr El Jebel. This channel is not shown upon any existing maps, and was first mentioned by Captain Gage, of the 7th Dragoon Guards, in his report upon his journey through the sudd in the winter of 1899-1900. It has a width of 70 yards, of which 10 yards on either side are filled by the swamp grasses. Its average depth, at low water, is 3 feet, and its mean velocity is 2 feet per second. Its discharge, as measured in March, 1901, was 21.74 cubic metres per second. Captain Gage's channel leaves the Bahr El Jebel at a right angle, but some 500 yards downstream it turns in a north-westerly direction. Captain Gage followed its course for some 40 miles, but was then stopped by sudd. It seems not improbable that this channel forms a junction between the waters of the Bahr El Jebel and those of the River Naam, which discharges into the Bahr El Ghazal, through the Khor Deleib. A few miles downstream its banks are lined by a succession of Nuer villages, and its width increases to 200 yards. It must carry a large quantity of water when in flood. At other periods of the year (January) it appears to flow into, not out of, the Bahr El Jebel.
North end* of false and true channels and block 15	4	143 230	Four miles further on the channel widens into a small lake, and from here* the true river is blocked by sudd for some 20 miles. This is termed block 15, and repeated efforts to clear it out (1901-02), owing to the total absence of current, resulted in failure. The expedition under Lieutenant Drury, 1903-04, very nearly succeeded in clearing the whole of the true channel. Both Lieutenant Drury and Sir W. Garstin later passed right through this block in 1904, the only remaining piece near the southern end of the block being fairly easily navigable. The true channel is from 16 to 20 feet deep, whilst the false channel to the west is only 4 feet to 6 feet in depth. One of the Dervish steamers, with boats containing ivory, was sunk in this part of the river, and was discovered by the 1903-04 expedition. At present navigation of the false channel is attended with considerable difficulty, and the services of a competent pilot are indispensable. The river is separated into many branches, and these cross and recross one another, forming a bewildering labyrinth of islands. At the south end of the small lake before mentioned, channels converge from all points of the compass. These are separated by low flats, covered with dense growth of papyrus.
Series of lakes...	7	150	After steaming for some 7 or 8 miles through a wilderness of papyrus, a series of lakes is reached, at mile 150 from Lake No. Stiff current here. These lakes have a depth of about 4 feet at the deepest point, but shoal rapidly towards the shore. A feeble but distinct current passes through them to the north. Their breadth varies largely. Their shores are surrounded by high papyrus and their surfaces are dotted by countless small sudd islands. There are, however, indications on both sides that the high land is not very far distant. It has already been explained that the true channel, which lies to the east of these lakes, is

* At this point was the "Box" or "Sanduk," on a pole, erected as a landmark and for letters.

Place.	Miles. Kilometres.		Description.
	Inter- mediate.	From Lake No.	
South end of true and false channels and of block 15	15	165 265	said to skirt the dry land. On the west a line of fair-sized trees at a distance of, perhaps, 2 miles, shows that the swamps in that direction also have a limit. A very noticeable feature of these expanses of water is their lifelessness. No birds are to be seen, and hippopotami appear to avoid them altogether. At mile 163 the lakes end, and a fresh network of branching streams confront the navigator. Here, again, very careful steering and knowledge of the passage to be followed is required. Each year these channels change. What is, in one season, the deepest channel, is, perhaps, the next year impassable. For some 5 miles the river is split up into many different branches, all winding through papyrus swamp. At mile 165 the true channel of the river is reached. The change is startlingly sudden, as the depth suddenly increases from 4 to 21 feet. Instead of a twisting stream, the Bahr El Jebel again becomes a fine open river, some 80 to 90 yards in width, bounded by a high fringe of papyrus on either side. The false channel leaves the river at an angle of nearly 90 degrees. In April, 1900, the junction was blocked by sudd, but this was light and easily removed. Large shallow lagoons extend on either bank, separated from the river by a belt of papyrus. The high land to the west ends about a mile from the river, and the swamp recommences. To the east a line of palms, perhaps, 6 or 7 miles distant, not improbably indicates the banks of the Bahr El Zeraf. Above this point the Bahr El Jebel widens out for some distance. In places its breadth is as much as 200 yards, and its depth from 15 to 18 feet. The swamps continue as before. At mile 166 the high land approaches the river on the east, and runs parallel to it for some 2 miles. It is covered with bush and an occasional Euphorbia. At this point a khor joins the Nile on the west bank, bringing in a strong stream of water. Two villages (Nuer) are to be seen in the distance; these are probably Favor and Fatooah of the German map (Julius Perthes). The mean velocity now averages $1\frac{1}{2}$ miles per hour. Between miles 175 and 200 the high land and bush before mentioned touches the eastern bank at intervals. At mile 187 there is a break in this ridge, and two or three channels leave the Nile to the east. These are said by the natives to be the most northerly outlets of the Bahr El Zeraf. In 1900 a fine deleib palm stood on the water's edge at this point. This formed a landmark that could be seen for miles. It has now, unfortunately, fallen into the river. At mile 220, and again at mile 223, channels come in from the west bringing water to the Jebel. These streams may possibly be the mouths of the River Rodi, or Yei, which is supposed to join the Nile somewhere in this locality. At mile 225 the false channel, which, previous to the clearance of blocks 16 to 19, was the only navigable line, joins the river. This was the route followed by Major Peake and Lieut. Drury in 1900, in making the journey to the upper Nile. They found the passage very difficult. During the transit they bent their rudder twice, and went aground four times. From this point numerous channels join the Bahr El Jebel on both sides. Many islands, covered with ambach and papyrus, separate the stream into numerous branches, and the whole country is once more a waste of swamp. The Bahr El Jebel here is extremely narrow (25 to 30 yards), but is from 18 to 22 feet deep. The false channel in appearance far more resembles the main river than does the true one.
Land approaches east edge of channel	1	166	
North channel to Bahr El Zeraf	21	187 301	
Mouth of Yei (?)	33	220	
North end old false channel	5	225 362	
Ex block No. 16	18	243 391	
" " 17	2	245 394	
" " 18	$\frac{1}{2}$	245 $\frac{1}{2}$ 395	
South end of block No. 18	3 $\frac{1}{2}$	249 401	It is hard to imagine that this narrow, twisting stream can be the Nile. Its windings are worse than ever. A tree or a boat may be visible at a comparatively short distance ahead, and yet many miles of channel must be traversed before it is reached. The river here runs nearly due west, while the false channel follows an easterly course, passing through numerous shallow lakes, until it joins the main river again at mile 249. At mile 240 the Jebel widens out again, and more resembles a river in appearance than it did. Its average breadth is from 50 to 60 yards, and its depth is some 15 feet. Between this point and mile 248 occurred the four sudd obstructions, removed in February, 1901, by Lieut. Drury, R.N., and which were known as blocks Nos. 16, 17, 18, and 19. At mile 249 the Bahr El Zeraf takes off from the Nile, following the false channel for some distance, before branching off to the east. The width of this river at the head is about 30 yards, and the outlet is surrounded by a sea of marsh. Just up-stream of this point there is a severe bend in the Nile, which might one day give trouble. As the steamer passes, decomposed sudd rises to the surface.
Bahr El Zeraf...	—	249 401	
Shambe...	7	256 412	The general character of the landscape now changes, as land and forest are visible to the west, and at mile 253 from Lake No, the Shambe lagoon or khor is reached. This is a large lake, some 3 to 5 miles in length, and more than $1\frac{1}{2}$ miles in breadth. Its depth averages $4\frac{1}{2}$ feet. The post of Ghaba Shambe is situated in north latitude $7^{\circ} 6' 30''$, on the west bank of its lagoon, at a distance of $1\frac{1}{2}$ miles from the river. The land here is about 2 feet over the water, but rises as the forest is reached. It is a dreary-looking spot, consisting of a mud-brick house inside a mud parapet, and a nuzl, and a few "tukls" erected on the flat shore of the lake; garrison of 25 men; a Dinka village lies not far off. Shambe

Place.	Miles. Kilometres.		Description.
	Inter- mediate.	From Lake No.	
			is now the chief Nile post of the Bahr El Ghazal province, and from here proceeds the road inland to Rumbek (116 miles), &c. The river winds round the lake for some 8 miles, separated from it by a band of marsh, about 600 yards broad. Large quantities of hippopotami. To the east the swamp stretches for a long way; at miles 255 and 256 are two other outlets of the Zeraf River. The aspect of the landscape is extremely desolate, with papyrus-covered marshes stretching in all directions. The river itself alternates between long straight reaches or easy curves, and a series of sharp twists and bends, which form a regular maze through the swamps. The water surface is covered with masses of detached plants of the <i>Pistia</i> (or sword grass) <i>stratiotes</i> . The mean velocity is 2 miles per hour; the average depth is 15 feet; and the average width from 50 to 60 yards. For many miles the same dreary scenery prevails. The river recedes a long way from the western forest, and on both sides an expanse of reeds and water extends. The width of the swamped area here cannot be less than 30 miles.
Abu Kuka ...	37	293 471	At mile 293 Abu Kuka, north latitude 6° 54', is reached. The papyrus swamp ceases just north of this point. Here the forest approaches the river, and the bank is dry. The thick bush comes down to the water edge, the trees being about 1,500 yards away. The village of this name is inland, and is not visible from the river.
Kanisa ...	11	304 489	At miles 300 and 304, the old and new wooding stations of Kanisa are respectively situated on the west bank. Kanisa or "Heiligen Kreuz," north latitude 6° 46', is the site of the Austrian Mission which was located here for many years. The church and buildings were situated on the eastern bank, only a foot or two above the water, but their traces are no longer visible. A large fruit garden formerly existed on the west bank, but only two large shady trees are still alive. This Mission was abandoned in 1864 or 1865, on account of the deadly effects of the climate. The only inhabitants now are a few Dinka. The forest is very thick and consists of Sidr, other acacias, and a few Euphorbia. This forest is continuous as far as the banks of the Rohl, some 60 miles to the west.
			Immediately up-stream of Kanisa, the river wanders away into the swamps as before. From this point, to mile 343, there is little to describe. The banks on both sides are very flat and rarely more than 2 feet above low water level. The papyrus now practically ends. Occasional clumps are to be seen, but nowhere in continuous masses. Tamarisk is common. The spills from the river into the marshes are very numerous, more particularly on the east bank. A line of trees on the eastern horizon, some 7 to 10 miles away, appears to mark the limits of the swamp. It is easy to see how the Bahr El Zeraf marshes are formed. At every few hundred yards the river spills into them. These spill channels are deeply cut, with vertical sides, as if dug by hand, and the amount of water discharged by them in flood must be very great. In size they vary considerably. Their average breadth is from 3 to 5 yards, but some are as much as 16 yards wide. Between miles 303 and 379, 129 spills were counted, of which 97 were on the east bank. Probably many more escaped observation.*
Lake Powendael ...	40	344 553	At mile 344 the large lagoon, known as Lake Powendael, commences on the west. The river circuits this lake for 4 or 5 miles, separated from it by a belt of swamp, varying in width from a few hundred to 2,000 yards. Lake Powendael is in many places as much as 3,000 yards in breadth, but is very shallow. Its surface is dotted with many small islands, and it is connected with the river by several inlets. Hippopotami are abundant in these parts. Both banks are now very low and flat, about 10 inches over the water. The reach of the river between Bor and Kanisa is unendurably desolate and monotonous, wandering through continual swamp for some 100 miles. At mile 360 another large lake is met with, also on the west. This sheet of water must be quite 4 miles in breadth, and the river winds round it for a long distance in a series of very sharp curves. Many natives are to be seen fishing here.
			At mile 374 a welcome change appears, as a limit is at last visible to the eastern swamps, which are practically continuous from Lake No ... this point. A line of villages (Dinka) stands 2 miles from the river, and behind them lies the forest. A little further up-stream these villages approach nearer, until at last, at mile 380 from Lake No, the high land on the east comes down to the river.
Bor† ...	40	384 617	Bor, north latitude 6° 12' 46", is a collection of Dinka villages which stretch northwards (outside the swamp) almost to the Bahr El Zeraf. The forest here stands back from the river on the east bank, but the high bank comes close to the water, except where a large backwater or lagoon passes through it for some 2,000 yards. Gordon mentioned this place as an inconvenient wooding station, but it is very handy now. A few tall deleib palms stand out as land marks. The houses of Bor are neither large nor important, but like in all Dinka villages they are well-kept, neat, and clean. The huts are circular in shape. They are plastered with mud and have conical thatched roofs. Each has a small door

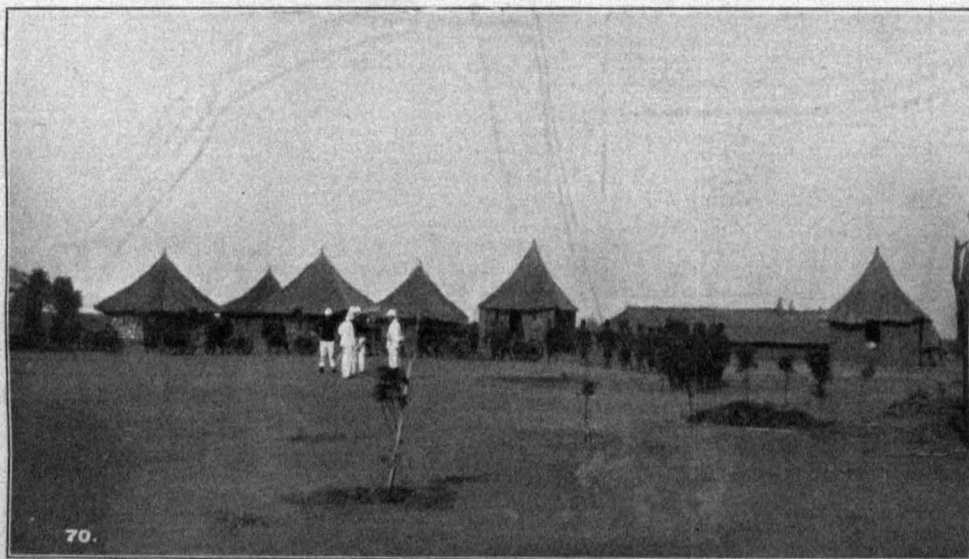
* *Vide* also page 144.† For fuller description of Bor and its people *vide* page 144.

Place.	Miles. Kilometres.		Description.
	Inter- mediate.	From Lake No.	
Dervish Deim ...	6	390 626	<p>through which the inmates crawl. The people show no signs of shyness and appear comfortable and contented. They possess large herds of cattle. At mile 384 the river runs close under the high bank, hugging it for some distance. The land here is from 6 to 8 feet over the water, and is, of course, never flooded. The forest consists of thick bush, with a few large trees; a distinctive feature is the thicket of small deleib palms which cover the ground. Not one in 500 of these young palms appears to develop into a tree, but they form an extremely dense undergrowth. The Bahr El Jebel is now a fine stream, 80 to 90 yards wide, with a strong current. On the west the marshes stretch into space. The valley here must be quite 20 miles across.</p> <p>South of Bor, the sudd, properly so-called, disappears. The marshes are formed of a deeper layer of sand, covered with a thin surface of clay, and with streaks of clay running through them. These swamps, except in the centre of the valley, are, as a rule, well over summer water-level, and the loss of water can be as nothing compared with that north of Bor. The vegetation, too, is of a different kind, being chiefly grass, and though dense enough, is not composed of those reeds which require to have their roots under water for a great portion of the year. At mile 390 the Dervish "Deim" is visible, situated on the east bank. This is the place held for so long by the Emir Arabi Dafaalla. The spot is well chosen for defence, as the river sweeps round it on two sides. The bank all round has been cleared of bush for a long way. The "Deim" is surrounded by a mud wall forming a rectangle, of which the river forms one side. The inclosure is some 400 yards deep by 700 yards in length. The mud bank, fast disappearing, is about 4 feet 6 inches high, with an outer ditch 3 feet deep by 4 feet wide. At the corners are small watch towers, and in other places remains of loopholed houses. The Bahr El Jebel now, for many miles runs close to the east bank. It winds continually, and there are occasional loops of swamp, but as a whole it follows the high land closely.</p> <p>Small military post, furnished from Mongalla. Formerly a wood station, now much cut up. Large numbers of elephants. This is to be the site of the Headquarters of the new Administrative District of Bor.</p> <p>In places the bank is perpendicular down to the water's edge, and from 6 to 8 feet high. At such points there is always great erosion. The scenery more resembles that of the Blue Nile than the White. The forest close to the river, the high banks, the profusion of creepers and undergrowth, the boils and eddies of the river along these curves, combine to form a picturesque scene, utterly different from that usually met with on the White Nile. About 22 miles south of the Deim the Dinka inhabitants are replaced by those of the Bari tribe. The difference is at once apparent. The "tukls" are untidy, crowded together, and badly built. The people seem poor and possess few cattle. They live chiefly by fishing; in April the whole population is engaged in preparing the land for cultivation, if the river allows, chiefly on the west bank. At mile 404 the river bifurcates, one channel branching off to the west, while the other, and the deeper, follows the eastern bank. These two channels reunite at mile 422. The width of the island between them is not very great, being rarely more than 800 to 1,000 yards. The west bank is now a flat grass plain, marked by swampy depressions. The river must top this in flood, but not to any depth, as the marks show that the total rise cannot exceed 4 feet. The west bank is inhabited by the Aliab tribe, a sort of cross between Baris and Dinkas, but they consider themselves quite distinct. The solitary mass known as Jebel Lado is now first visible on the south-west horizon. The river above the junction of the two channels averages 80 yards in width and 11 feet in depth. The bends and twists are never-ending, and there is hardly a straight reach in its whole length. The banks are very sandy, as are the flats which show up above the water. Occasional small islands separate the channel into two or more branches.</p> <p>There is now a decided ridge on either side of the main channel resembling that described in the White Nile. East and west of this ridge the level of the flats is lower, and in the depressions lagoons are formed and winding channels wander. The average width of the valley here cannot be more than from 5 to 7 miles. On either bank the forest line marks the high ground. On the narrow ridges above described are located a few groups of Bari huts surrounded by fields of dura. The high ground does not average more than 100 to 200 yards in width. At mile 431 a magnificent tree used to be situated on the eastern shore. It made a striking landmark, but disappeared in 1902.* The forest rises rapidly from the water, and at its highest point is quite 20 feet above summer level. One-and-a-half miles up stream, the river, which has followed the eastern bank for so long, now winds</p>
Bor (military post) ...	8	398	
Tree disappeared*	33	431 694	

* There is a large Gemmeiza tree, sheltering a rest house, with a wooding station, in this neighbourhood. Opinions are divided as to whether it is the original tree.



KIRO.



70.

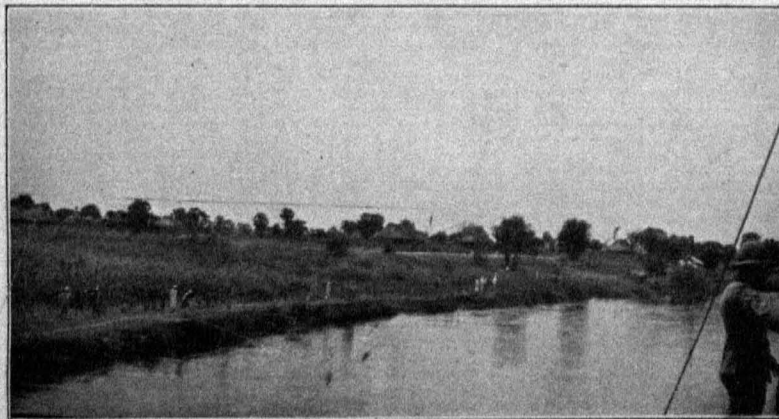
LADO.

Place.	Miles. Kilometres.		Description.
	Inter- mediate.	From Lake No.	
Pole west bank (April, 1903) to mark 5° 30'.	17	448 721	<p>across in a westerly direction. In thus crossing the swamps, an excellent idea of the general section of the valley is obtained. In the centre the flats are, perhaps, 2 feet above the water; towards the sides they rise to a height of 4 feet and sometimes 4 feet 6 inches. The lower portions are marked by a series of lagoons. These marshes are only, however, swamped when the river is in flood, and even then not to any great depth, as the total flood rise is not more than 4 to 5 feet over summer level. The valley averages 8 to 10 miles in width. The forest and thick bush extend to a long distance away from the river. Progress through this forest is only possible by means of the elephant tracks, which are very numerous. At mile 438 the channel again bifurcates, the two branches reuniting 5 miles up-stream. There are so many islands and so many side channels, that it is almost, if not quite, impossible to find the whole stream contained in one single channel, and this is the case the whole way between Bor and Gondokoro. The river varies immensely in width. In places it is from 200 to 300 yards broad, and in others only 80 to 90 yards. As the Bahr El Jebel is ascended the average depth decreases, and throughout the reach between Kiro and Lado is rarely more than from 6 to 9 feet. At mile 451 the river touches the western forest edge, having traversed the marshes. The trees on this side are, as a rule, finer than those in the eastern forest. The bank, at the water's edge, is from 3 to 4 feet high, but rises rapidly to a height of 12 to 16 feet above the water. At mile 456 used to be an Anglo-Egyptian station, 1901 (west bank), now abandoned. The scenery here is very fine, and luxuriant tropical vegetation abounds. Giant Euphorbia are a marked feature of the landscape. The whole of the banks and most of the trees are covered with a velvety-looking mass of creepers. A bluff, 10 to 12 feet high, juts out into the stream, but the action of the current is so strong that the friable soil is being rapidly eaten away. The face of this cliff is perforated by myriads of holes, made by a very beautiful and tiny species of bee-eater. These birds have rose-coloured wings with bronze-coloured bodies. They add much to the beauty of a lovely scene.</p> <p>At mile 400 from Lake No, the station of Kiro, the most northerly in the Lado Enclave, is situated on the western bank. The latitude of Kiro is apparently between 5° 12' and 5° 13' north. The erosion caused by the river here is very great, large masses of the sheer cliff, which is 15 to 20 feet over the summer water-level, are constantly falling into the Nile. It seems probable that unless they take protective measures the Belgians will be forced to retire their houses some distance back from the water. Kiro is a picturesque-looking place. The huts are well laid out and neatly built. The cantonment is surrounded by a brick wall, with places for guns, parapet, and ditch. The Commandant's house is a comfortable-looking structure, with a good thatched roof and a deep verandah. The forest surrounds the station. The garrison consisted in January, 1903, of some sixty-five men. It possessed a small steamer (the "Van Kerckhoven," called after the leader of the first Congo Expedition to the Nile, 1889; the boat is clumsy and draws 4 feet of water; but having been brought in sections overland from the west coast she is entitled to respect), and several steel sailing boats. The negro soldiers differ largely in type from the inhabitants of the Nile valley. In figure they are short and squat, and some of them are much tattooed. They are recruited from the West Coast, and from the tribes in the Congo valley generally, and make excellent and very mobile soldiers. Upon an island opposite the station vegetables and paw-paw trees are grown. Beyond this there appears to be little cultivation. Kiro is extremely unhealthy in the rainy season. In two years the Belgians lost 9 Europeans and 300 natives from fever. Black-water fever is not uncommon here, and guinea-worm is a prevalent complaint. One-and-a-half miles up-stream of Kiro two fair-sized lakes are enclosed by the western forest. These evidently receive the drainage of the high land from a considerable distance. On the east bank a khor, passable for small steamers, runs north-north-east, rejoining the river just north of Kiro. From here to mile 467 the river skirts the western bank. Everywhere severe action is taking place, and many trees have fallen into the water. Three miles on another large lake opens out in the forest. At one end of it the Lado mountain forms a background, making an imposing picture. At mile 468 another bifurcation occurs. The western branch follows the forest as far as Lado, but navigation in summer by this channel is difficult. The eastern branch crosses the marshes. There are several connections between the two channels. The river now averages from 250 to 300 yards in breadth. At mile 472 the eastern forest is again reached. Here there is a good wooding station, as the trees and high land come down close to the water's edge.</p>
Western forest ...	3	451 726	
Old Anglo-Egyptian station of Kiro.	5	456 734	
Kiro (Congo F.S.) ...	4	460 740	
Mongalla* ...	14	474 763	<p>Most southerly post on the Nile of Sudan Government (occupied 1901), situated on east bank. Garrison two companies. A gunboat is always stationed here, in addition to which there is usually a steamer at the disposal of the Commandant for administrative purposes.</p>

* For further description *vide* p. 146.

Place.	Miles. Kilometres.		Description.
	Inter- mediate.	From Lake No.	
Sheikh Lado's village, east bank	2	476 766	<p>About 200 tukls. Open grassy, sandy spot; fairly healthy; 5 to 8 feet above water. Plenty of trees and bush. The Bari are the inhabitants of the district, but are few in number; few supplies. Brick houses. Proceeding up-stream, the river divides, the main channel running through swamps, and the east channel skirting the villages of Sheikh Lado, Lowala, and Yemba. The depth is rarely more than 9 feet, though there are occasional pools of 12 to 16 feet in depth. Hippopotami used to be extremely numerous and particularly obtrusive, but seem lately to have disappeared. A few huts are to be seen, chiefly on the eastern shore. Most of these have been recently constructed, as many of the Bari have migrated from the west to the east bank of the river, and have settled on Sudan territory. At mile 477 the river again leaves the east bank and crosses the swamps. The width of the valley now contracts to some 4 miles. Such a labyrinth of streams winds through these grassy flats that, without an experienced pilot, navigation would be extremely difficult, more especially as the depth of water rapidly decreases. As it is, there are so many sand banks that it is difficult to proceed at night. At mile 494 the west channel, mentioned as branching off at mile 468, rejoins the east branch, and half a mile up-stream the station of Lado is reached. At this point, with the exception of a moderate-sized inlet some 3 miles down-stream of Lado, the river is confined in one single channel.</p>
Lado	19	495 796	<p>Capital of the Lado Enclave, taken on and rebuilt in 1898. Formerly an Egyptian post, and at one time head quarters of Emin Pasha. Situated on the bank 10 to 14 feet above river. Very well selected position, protected on the north by a broad swift running khor and 2 forts, and on the south by an impassable morass; only land approach from the west commanded by a fort. Surrounded on three sides by a rectangular parapetted enclosure, about 400 by 200 yards, one long face being open to the river. Garrison, about 15 white officers and 500 men (1904). Enclosure contains about 20 good brick straw-thatched houses, and good tukls for the men. Road leads to Rejaf (broad) and thence to Yei, Ibembo and Mbima. Native track also to Kiro. Good bamboo and some gum about Jebel Lado. Forest close by. Few or no supplies. The neighbourhood of Lado is a desolate-looking spot, not nearly so picturesque as Kiro, but, on the other hand, healthier. A flat plain with bushes stretches from the river for about 2 miles. From here the forest commences, and gradually rises to the spurs of Jebel Lado, which is some 12 miles from the station. The food for the troops has to be brought from a very long distance. In front of Lado is a low island, upon which vegetables, bananas, and castor-oil plants are grown. This island is 4 feet over low-water level at the south end, and was topped by the 1903 flood. According to the Belgian officers, the flood water contains but little sediment beyond sand, and this statement is borne out by the deposit on the flats and banks. They further state that in flood the colour of the water scarcely changes at all. There appears to be no trade whatever, but a good deal of cultivation. The ivory collected here is small. India-rubber is apparently not found within any reasonable distance of the Nile. Owing to the two years' drought and one year's flood, the natives on the west bank of the river had no supplies. Lado possesses a fine herd of long-horned cattle for the use of the garrison. Fever is very prevalent during the rainy months, but does not appear to be of such a deadly type as at Kiro. In April, 1901, the rains had already commenced. According to M. Renier, the month of May in this region is one of abundant daily rainfall, but this is not always the case.</p> <p>Proceeding up-stream from Lado, the scenery improves. Eleven ranges of irregularly-shaped peaks are visible to the east and south-east. Most of them are covered with scrub, and round the bases the bamboo is said to grow in luxuriance. From the river bank up to these ranges extends a broad expanse of reeds and grass, bounded by a dark forest line. To the west the country rises rapidly in a series of ridges clothed with forest. The Bahr El Jebel now averages from 250 to 300 yards in width, and the depth ranges from 6 to 8 feet. Islands and side channels abound, and in flood time it must be difficult to say which is the main stream. The loss of water is comparatively small, as the grass flats are high. Numerous Bari villages on the east bank and on the islands, but few on the west bank. Further south, range upon range of hills show up in the distance, one beyond the other. These are not very high, but are of striking outline and form an agreeable change to the eye, after days passed in the dreary flatness of the Jebel marshes. The width of the valley is here about 5 miles from bank to bank. The Bari villages increase in number on the east bank as the river is ascended. Jebel Lado still dominates the western landscape, and Jebel Rejaf, a pyramidal and solitary peak, marks the point where the reefs and rapids begin. On approaching Gondokoro, navigation becomes more and more difficult as the water shoals rapidly, and the maze of channels and islands are perplexing and intricate; half a mile from Gondokoro are some bad shallows.</p>

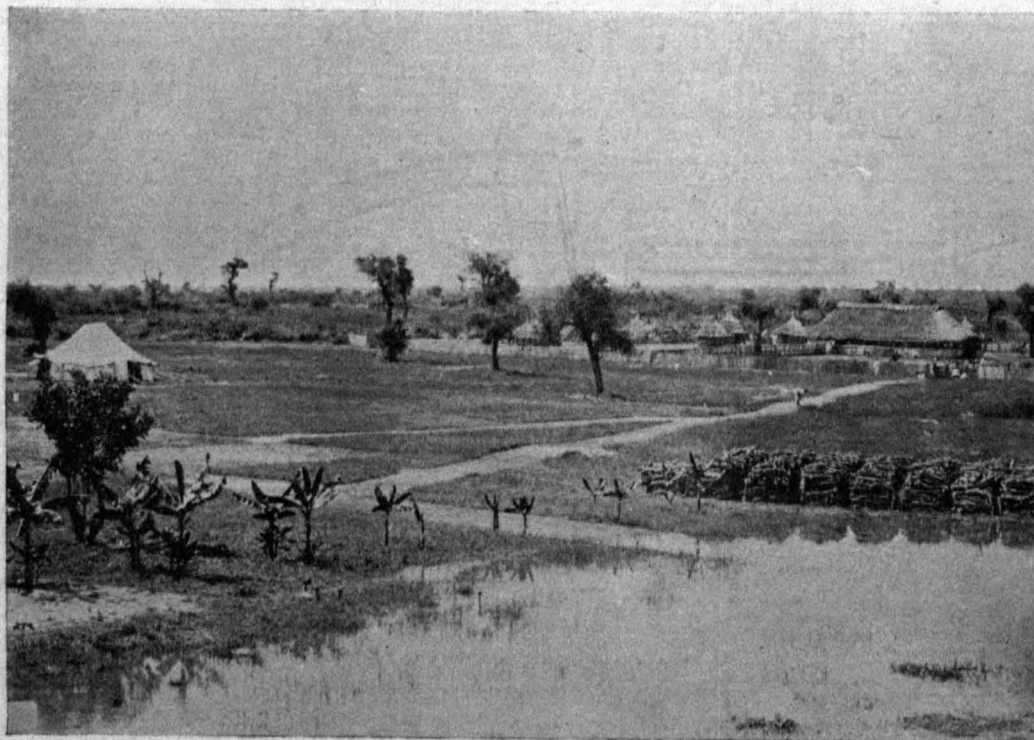
Place.	Miles. Kilometres.		Description.
	Inter- mediate.	From Lake No.	
Gondokoro	9	504 810	<p>At mile 504 from Lake No, the station of Gondokoro is reached. This place, on the east bank of the Bahr El Jebel, is the north frontier post of the Uganda Protectorate. Gordon gives the latitude of Gondokoro as 4° 54' 29" north, and the longitude as 31° 43' 46" east. The altitudes given by different authorities vary so much that they are not worth recording. Gondokoro, although a healthy-looking station, has a deserted and scattered appearance. The buildings, mostly of bamboo and straw with brick houses for the European staff, contrast but poorly with those of the Belgians at Lado and Kiro; the station was occupied in 1899. The Collector's house, or Residency, is situated about 300 yards to the north of the garrison lines, and 130 yards from the river. It is built of burnt bricks, with a high thatched roof, on ground 16 feet, or more, above the river, and surrounded by a thorn zeriba. This and the M.O.'s house are raised on brick arches from the ground and surrounded by gardens and cultivation. The thorn scrub approaches to within 1000 yards of the houses. The station is situated on a high cliff, from 18 to 39 feet above the water. Much of this cliff has fallen in, and the foundations of the Austrian Mission Buildings, abandoned in 1858, are now on the extreme edge of the high bank. A few deleib palms and lime trees mark this bluff. The station extends over an area of about 1 by $\frac{1}{2}$ mile. The new lines are built some 400 yards back from the river. The present huts which accommodate the small garrison are circular huts of mud and grass. There is also a police barracks containing about 25 men. The remains of Baker's old lines are still existing. He had here a garrison of 1,500 men, but in his time the Bari was a powerful and warlike tribe. Gondokoro was, moreover, an important centre for the slave trade. Baker's old lines consist of three rectangles, one within the other. The inner one is about 300 by 400 yards; the second, 500 by 800 yards; while the outer is, perhaps, 1,000 to 1,200 yards square. Each of these rectangles is surrounded by a mud bank about 4 feet high, with an outer ditch 4 feet deep by 6 feet broad at the top. There used to be plenty of trees, bananas, paw-paws, etc., and the station was, on the whole, a pretty one, but floods and white ants have now destroyed many of the trees. To the south and north of the station, and also $1\frac{1}{2}$ miles to the east, are large marshes, which must tend to make the place unhealthy. At times wild elephants come close to the lines. Many Bari villages are located on the river near Gondokoro. All these are on the east side. The Bari appear to be better agriculturists than are either the Dinka, Nuer, or Shilluk. They cultivate dura, ground nuts, beans, and a little tobacco; also sweet potatoes, and manioc. A small market for local produce has been established, and Bari and Luluba keep it fairly well supplied; time, it is hoped, will bring an increase in population and cultivation. The castor-oil plant grows like a weed in this locality. The average maximum flood rise of the river here over summer level is not more than 4 feet. In the flood of 1878 it rose to a height of 7.2 feet on the gauge (Chelu). The general direction of the river here is north and south, so that Gondokoro is well situated with regard to the prevailing winds. The main channel, opposite the station, is about 400 yards across, but is separated from the main land by a large island.</p> <p>(For description of the river to the Albert Nyanza, <i>vide</i> Appendix, Vol. II.)</p>



GONDOKORO.

RECAPITULATORY TABLE OF DISTANCES.

	Intermediate.		From Lake No.	
	Miles.	Kilometres.	Miles.	Kilometres.
Hellet el Nuer	139	223	139	223
False channel (22 miles)	4	6	143	230
Bahr el Zeraf (south end)	106	170	249	401
Shambe	7	11	256	412
Abu Kuka	37	59	293	471
Kanisa	11	18	304	489
Bor	80	129	384	617
Latitude 5° 30'	64	103	448	721
Kiro	12	19	460	740
Mongalla	14	22	474	763
Lado	21	34	495	796
Gondokoro	9	14	504	810



MONGALLA.

CHAPTER III.

NORTH-EASTERN SUDAN.

(Country bounded on the north by the Sudan-Egyptian frontier, on the west by the Nile from that frontier to the mouth of the Atbara, on the south by the Atbara and Abyssinian and Eritrean frontiers, and on the east by the Red Sea.)

SECTION I.—COUNTRY BETWEEN HALFA AND THE ATBARA MOUTH ALONG THE NILE BANKS.

Along the Nile from Faras to Halfa the east bank is fairly well cultivated. From Halfa to near Kosha, with the exception of Sarras, there is little cultivation and practically no inhabitants. Most of this stretch is rocky and desert-like, and is known as "Batn El Hagar." South of Kosha cultivation and villages become more general, and continue almost uninterruptedly to Abu Hamed (*see* Chap. II, Sections 1 and 2. For the left bank, Dongola town, etc., *see* Chap. IX.) General.

Between Abu Hamed and the Atbara junction there is little cultivation on the east bank, except south of Genenetti. From here to the Atbara there are about 500 sagias. The cultivated land, as a rule, extends about 500 yards back from the river, and in a few places as much as 3 miles.

The country enclosed by the river and the mainline Sudan Government Railways between Halfa and Abu Hamed is waterless, sandy, or gravelly desert, broken here and there by rocky hills and ridges. It is practically uninhabited, but is believed to contain minerals and workings of old mines near Kuror, etc. These are now being explored.

The soil on the banks of the river in the Dongola Province is rich and alluvial almost throughout, and well adapted for cotton cultivation. This province is in fact the richest and most prosperous in the Sudan.

Health is excellent all the year round. Very little fever, only simple cases. Little rain; showers may be expected in September. The wind is almost constantly from the north. Ophthalmia, common in Egypt, is rare in Dongola Province. During months June to end of September, the weather is very hot and enervating, but air dry. Climate.

Good roads, 5 metres in width, have been made on both banks of the Nile throughout the Province; bends can be cut off frequently, notably between Kosha and Abu Sari, a distance of 35 miles across the desert with no water (*see* Chap. II). There is a desert track on the right bank from Dongola (Nau) to Merowe, a distance of about 100 miles without water, and there are other desert tracks which have never been traversed by a white man; of these latter little or nothing is known. Communi-
cations.
Roads.

Heavy goods, such as merchandise, grain, dates, etc., are mostly carried by boat, and there is no lack of transport for the needs of the natives in this respect; boats are constantly being built, and every encouragement is given them to do so. Boats.

A fortnightly post boat runs between Kerma and Merowe. From February to June, however, the low state of the river renders navigation for steamers dangerous through the rapids between Kerma and Dongola; during these months, therefore, the mail is carried by camels over this reach of 40 miles, transport requirements being conveyed by Government gayasas, of which there are 9 in the Province. There are two steamers (1903).

From Halfa to Debba the inhabitants are Berabra.* The Mahasi dialect is spoken from Halfa to Kerma. Here the Gararish† and then the Danagla (Berabra), commence and continue to Debba; from there on to Berti are the Shaigia. From Berti to Khulla the Monasir are found, and then come the Robatab, who extend as far as Kerraba. From here on to the Atbara junction are the Angariab, Hagab, Merifab, and Fadlab. The few inhabitants of the desert are mostly wandering Bisharin. Population,
riverain, and
desert.

The total riverain population of Dongola Province numbered (December, 1902) 105,026, and is rapidly increasing.

This is exclusive of nomad Arabs, whose numbers may be put down at 2,000 Gararish (along the river), besides Bisharin, and other Nomads (*vide* Appendix F.) on the left bank.

The occupation of the people is that of cultivating the ground, which they do very imperfectly except in Dar Shaigia; it could be made to produce double the amount.

* There are 4 Berberine dialects, viz. :—

(1) "Kensi" from Shellal to Korosko.

(2) "Feiadija" spoken near Korosko and South.

(3) "Mahasi" spoken at Halfa, Sukkot, Mahas and up to Hannek Cataract and Badin Island.

(4) "Dongolawi" from Kerma to Ambugol.

(2) and (3) are nearly the same, and (1) and (4) are somewhat similar; but a Dongolawi cannot understand a Mahasi.

† The Gararish are Nomad Arabs and their northern limit may be said to be Halfa.

The natives of Mahas and Sukkot lag behind, the fault being entirely their own; they are of an extremely indolent nature, perpetually quarrelling amongst themselves over questions as to ownership of land and date trees, and do little or nothing towards bettering themselves.

There is naturally a certain proportion of poor in the province, but agricultural labour being in demand, employment is always to be obtained by persons not too lazy to work.

Cultivation.

The cereals mostly cultivated on the river bank are dura, barley and wheat. Cotton has hitherto been grown to a limited extent for local use only. On the completion of the Nile-Red Sea Railway a great increase in cotton culture is expected. A large amount of land, admirably suited to the cultivation of this valuable commodity, is available, and very large issues of Egyptian cotton seed have this year (1904) been made by the Government.

In the Berber Province the wheat and barley grown are of good quality, but both are expensive to cultivate.

Average yield per feddan (Berber), barley 5 ardebs, average price per ardeb, PT.45 to PT.55.

" " wheat, 3 " " PT.75.

" " dura, 5 " " PT.35 to PT.80.

In the Dongola Province the crops are as follows:—

Crop.	Months when planted.	Months when cut.	No. of crops yearly.	Average yield per crop per feddan of PT. 40 land.
Dura	June and September	August and December	2 }	3 to 4 ardebs.
Dura Shami	June	August	1 }	
Wheat	December	March	1 }	2½ to 3 ardebs.
Barley	December	February, end of	1 }	
Simsim	September	October, end of, or November, beginning of	1	

N.B.—The majority of the land will give three crops yearly, viz., twice dura and once wheat or barley.

The number of sagias in the Dongola Province in December, 1902, was 3,462, besides 77 shadufs and two pumps. There are now (1904), nearly 4 000.

Iron sagias, though tried, have been pronounced unsuitable as they are difficult to repair. Iron fittings for the old wooden sagias have, however, proved a decided success. European ploughs are not popular on account of their weight.

The chief requirement of all the riverain Provinces is agricultural labour, men of the fellahin type, who would teach the inhabitants how to till and tend the soil, and thus produce crops in proportion to the value of the land.

The local breed of cattle is fair, and moderately numerous, but might be improved in both respects.

Dates.

The date tax (PT.2 per tree) is one of the principal items of revenue in Dongola. There are also a considerable number of trees in the Berber Province. It is hoped that the new railway will enable dates to be much more largely exported,* and thus materially increase the revenue of these Provinces. At present the freights are almost prohibitive. Date harvest, October and November. Quality in Dongola excellent, and ripen before those from Egypt, Tunis or Tripoli. In Berber the dates are not so good.

Dom palms.

The dom palm furnishes a means of livelihood to many of the riverain inhabitants in the Berber Province. The leaf is made into mats, sandals, and baskets. Coir (lif) is largely exported to Omdurman, where it is made into rope.

Other trees.

Besides the above, there are sunt trees mostly used for sagia building, and selem, talh, samr, and heglig mostly on the back lands, with haraz and the dwarf tarfa on the river bank. Tamarind trees are being introduced and are doing well.

Senna.

A certain amount of senna grows wild in the Berber and Dongola Provinces. It is gathered by the Arabs, who transport it to Kordofan, and Aswan, where it fetches about £E.2½ per camel load.

Fruit.

Melons and lemons are plentiful in the spring and autumn. People are commencing to cultivate the vine.

Trade.

The import trade of the Dongola Province consists chiefly of cotton goods and such luxuries as sugar, tea, coffee, perfumery, etc., and of the export of cereals and dates. Business, however, is not brisk. The chief obstacle to the development of the import trade is the want of enterprise on the part of traders. There are excellent openings for merchants. The people are well off and willing to buy, especially such goods as cutlery, crockery, soap, agricultural implements, hardware, and such sundry merchandise, but at present (1904) there is not a single well-to-do trader in the Province.

* In 1904 about 30,000 kantars of dates were exported from Dongola, the average price per kantar being about 22P.T. The cost of freight per kantar from, say, Merowe to Omdurman is about 75T.P.

Native cotton cloth, called "damur," is worked throughout the Province, and forms the chief clothing of the men, who dress in shirt and drawers, with ferda (or toga) of this material.

Crime is small in proportion to number of population. Inhabitants most peaceably inclined, and all (men, women, and children) work at their crops. Administrative.

Villages are mostly composed of well-built houses straggling along the borders of cultivation. The houses are built of galus (mud and stones), with good court yards, whitewashed and clean. Very superior to those of fellahin in Egypt. Housing.

The "Nimetta" fly, a small midge, appears in countless myriads from November to April, both months inclusive, between Dalgo and Korti. The bite causes slight fever through irritation. At times they are absolutely unbearable, and cause temporary migrations of both white men and natives. Natives wear bunches of smouldering grass twisted round the head to keep off the fly. Miscellaneous insects.

White ants also are both numerous and most destructive between Dalgo and Korti.

HALFA (Wadi Halfa), comprising "The Camp" and "Halfa town" is the capital of the Province of Halfa,* which extends along the Nile from Faras Island (N. lat. 22° 10' approximately) to Abu Fatma. It is also the present headquarters and terminus of the main line (Sudan Government Railways) to Khartoum, as well as of the branch to Kerma. There are extensive railway workshops at the Camp. The latter includes barracks, prison, officers' mess, native quarter, and the old fortifications. Also post and telegraph office. Population about 400, of which one-quarter are white. No garrison at present. Halfa was for years (1885-96) the headquarters of the Frontier Field Force which defended the southern frontier of Egypt against the Dervish invasion. Chief towns.
HALFA.

The civil quarter of Halfa lies 1½ miles to the north of the Camp. Here there is an excellent hotel, also railway station, post and telegraph offices, some good stores, and native bazaar. The population, which is composed chiefly of Egyptians and Sudanese, with a large sprinkling of Greeks, is about 2,900.

BERBER is a long straggling mud-built town containing about 5,000 inhabitants. It was captured by the Mahdists after a certain resistance on the 26th May, 1884, and was re-occupied by the Anglo-Egyptian forces under Lord Kitchener on 6th September, 1897. It is now the capital of the Berber Province, but this will be moved to El Damer in 1905 (*vide* Chapter IV). There are at present two railway stations, Berber Camp and Town. Post and telegraph office. There are no good stores in the town, and there is little trade here at present. The present town lies 2 miles to the north of old Berber, and is the headquarters of an Egyptian battalion. BERBER.

The desert road to Suakin starts from here (242 miles). Behind the town an immense flat plain stretches to the horizon. This is fertile soil, and only awaits proper irrigation to be reproductive. Berber is 1,140 feet above the Mediterranean or 95 feet below the level of Khartoum.

SECTION 2.—COUNTRY BETWEEN HALFA, BERBER, SUAKIN AND THE INTERSECTION OF THE 22ND PARALLEL WITH THE RED SEA.

(a) BETWEEN THE RAILWAY AND THE NILE.

For purposes of description this area is conveniently divided into two portions by the Halfa-Abu Hamed Railway. The portion west of the railway comprises some of the most arid country in the Sudan. The general formation is that of a plain covered with sand or gravel, dotted here and there with steep and even precipitous hills of from 100 to 800 feet elevation above the plain, which falls gently and uniformly to within a few miles of the Nile. In places these detached hills are so numerous and so close together as to resemble connected ranges. As a rule the sand is coarse and heavy enough to afford excellent going for camels; but strips of soft deep sand are occasionally met with, especially where the wind has banked it up against or between the hills. General.

The crest of this gently sloping spur projecting into the bend of the Nile, is some 2,000 feet above sea level, where the railway crosses it, that is some 1,550 feet above Halfa and 1,080 feet above Abu Hamed.

The country midway between the river and the railway has been little visited, and the only known place of any importance is J. Kuror, the highest hill west of the railway and some 4,070 feet above the sea. After heavy rains its "Makhzans," or rocky reservoirs, hold water for many months, and are occasionally visited by nomad Arabs.

Immediately south of Halfa the plain terminates in a belt of low hummocky hills, some 8 to 10 miles wide. After Sarra, the belt becomes wider and the hills bolder, till they culminate in J. Ago, east of Akasha, at the southern end of the Batn El Hagar.

Between Akasha and the latitude of Kosha the country becomes less confined, but contains several high and precipitous hills. South of Kosha it becomes more and more open, and the hills lower and more scattered until they appear to die away south of Kerma.

* The population of Halfa Province in 1904 was 30,800.

From Kerma, as far as Old Dongola, practically no hills are visible from the river, and the sand hills are piled up on the very edge of the water. At Old Dongola the ground rises, and from there, as far as J. Barkal, near Merowe, rocky elevations approach the river here and there, or are seen in the distance, without, however, always encroaching on the fertile belt on the right bank.

From J. Barkal to Abu Hamed there is a rough and rocky belt of hills a few miles from the river, though the elevations are inconsiderable.

Drainage. Rain falls at long intervals in very heavy and local showers. From the upper part of the country it is carried off by a number of wide shallow wadis, whose beds are hardly distinguishable when crossed, though the slight remains of grass they sometimes contain show them up clearly when looked down on from the top of a hill.

As these wadis reach the rocky belt along the river, their beds contract so much that after heavy rain regular torrents descend them, sweeping away anything they find in their path. Much damage occurred in this way to the camp at Akasha in 1896, though no rain fell in the vicinity.

South of the crest of the spur the chief drainage lines are the two Wadis Keheli, one of which rises near J. Kuror and joins the Nile, about 40 miles below Abu Hamed; the other rises near No. 5 Station and is followed by the railway under the name of Wadi Gaud, and eventually reaches the Nile a little west of Mograt Island.

Vegetation. Some of the wadis contain a little grass and a few stunted selem bushes, but there is no grazing for flocks except within a few miles of the Nile. Firewood also is very rarely met with.

Inhabitants. The riverain inhabitants graze their flocks a few miles into the desert. Besides these shepherds there are no inhabitants.

Cultivation. There is none.

Roads. Except in the hilly belt along the river, camels can go anywhere.

The only track at all well-known is that from Dongola (Nau) to Merowe, cutting off the great bend of the Nile to the south.

(b) COUNTRY EAST OF HALFA-ABU HAMED RAILWAY, OR "THE ATBAI."

Limits. The Atbai is roughly the name applied to the country bounded on the north by the Kena-Kosseir road, on the south by the Berber-Suakin road, on the east by the Red Sea, and on the west by the Nile from Kena to Halfa, and thence by the Sudan Government Railway to Berber. It lies, therefore, approximately, between N. lat. 26° and 20°.

The northern half, which is inhabited by the Ababda, belongs to Egypt; the southern portion, inhabited by the Bisharin and the Amarar, etc., near Suakin, belongs to the Sudan. Although on many maps this country is generally labelled "Nubian Desert," much of it is by no means desert in the true sense of the word. Comparatively little is known even now of the more southern districts* of the Atbai, and the following descriptive notes must be taken to apply chiefly to the country between north lat. 21° and 22° 30'.

Bisharin country. The country of the Bisharin, which is bounded on the north by an irregular line rather north of lat. 22°, and to the south extends as far as Mitateb on the Atbara, contains wide stretches of gravelly, sandy, or stony desert, intersected by frequent bare sandstone and granite ranges, but, at the same time, on the eastern side especially, it contains many more or less fertile and quite luxuriantly wooded wadis, in which water is sometimes found within 2 or 3 feet of the surface.

Drainage. East of the railway the hills become more frequent and larger, and the drainage lines more conspicuous.

Generally speaking, the watershed between the Nile and the Red Sea, which lies between 35° and 35° 30' E. long., consists of a mass of hills from 30 to 40 miles in width. These hills, which consist of agglomerations of rather small features, out of which a bolder peak, such as J. Eigat, occasionally rises, are intersected by very numerous rocky khors, which feed a few large and well-wooded wadis. West of the watershed, from as far south as 20° 30', all the drainage escapes north by the wadis Alagi and Gabgaba, which unite to the east of Korosko and join the Nile near Sayala.

Of these the Gabgaba has the longest course, as its head waters rise much further south than those of the Alagi. Much of its basin is still unexplored, in fact, the only well known portion is the plain south-east of Murrat wells, which is painfully arid and deficient in vegetation.

Many of the wadis, however, that descend to it on the east are well wooded as long as they are in the hills, and even for a few miles after they have emerged from them.

The scheme of drainage here is exactly the reverse of that west of the railway.

Instead of water-courses beginning broad and ending narrow and deep, here they commence with narrow defined rocky channels, gradually becoming broader, sandier, of more gentle slope, and in many places with fine trees and much "tabas" grass. When the hills are left, however, the trees die away, the grass disappears, and the bed becomes ill-defined or completely lost. South of the parallel of Murrat the country appears to become more open, and probably very wide plains exist with little to offer to even a desert Arab.

* *Vide* p. 89.

South of the Gabgaba Basin, the drainage from the watershed descends nearly due west by several large wadis, which have at various times given trouble to the railway. Owing to the outcrop of rocks near the river between Abu Hamed and Berber, the beds of these wadis become restricted as they approach the river, with the usual result as regards spates and floods.

On the east of the watershed the wadis, after leaving the hills on which they rise, traverse a range of granite hills, and thence flow, generally in a north-east direction, to the maritime plain of the Red Sea.

Drainage
east of
watershed.

The principal wadis, from north to south, are Hasium, Di-ib, and Haieit.

The Wadi Hasium, after emerging from the hills of Abu Hodeid, skirts the Kajoj and Musa ranges, which it leaves some distance to the south, and flows through open country to the sea. It contains the wells of Kajoj and Shalatein.

The Wadi Di-ib, perhaps the most important wadi of the Eastern Atbai, rises in the Ammar country, probably as far south as the 20th parallel, and flows generally northwards. About 20 miles before it turns eastwards to traverse the open maritime plain, it opens out into a wide basin, a mile in breadth and 8 to 10 miles in length, containing a bed of rich alluvial soil. This basin forms the principal cultivable land in the Um Ali Bisharin country. It is the property of the Shantirab, but portions are allotted both to the Amrab and Belgab in good years. An important tributary on the left bank of the Di-ib is the Wadi Hufra, which, rising in the Amrab country in the hills to the north-east of Onib, joins it at the north end of the J. Elba range. It receives all the drainage from the hills of the southern Belgab country by the Wadis Is and Legia. At several places in its bed, the Arabs cultivate and obtain good crops of dura.

Wadi Haieit, in the southern Atbai, is also said to be cultivated.

The ranges of Elba and Asotriba are composed of red granite, whilst at the foot of the latter are small hills of very beautiful hornblende porphyrite.

The climate of the Atbai is probably the best in the Sudan. The air is of absolute purity, and the elevation, 1,500 to 3,000 feet above sea level, very considerably mitigates the shade temperature. The heat of the sun, however, is intensely fierce in warm weather, owing to the glare from the sand and rocks. During the summer, waves of superheated air are occasionally known, such as that which destroyed a convoy on the march from Korosko to Abu Hamed in 1897.

Climate.

In winter, the cold is quite severe, and anyone proposing to travel there in December or January should make sure he has plenty of bedding and warm clothes.

Though it is essentially a very dry climate, dew falls at Deraheib on the west of the watershed in December, and a misty haze, which seems to be connected with moisture in the air, frequently covers the whole country. The climate of the littoral is, as may be supposed, much warmer than that of the interior.

The rain falls in violent local showers during the months of July and August, called the "Shuti" rains. In exceptional years, showers occur in May and June.

Rainfall.

Many places go without rain for several years in succession, but during the above-mentioned months it is always risky to camp in the bed of a wadi, as a spate may come down, though no rain nor clouds have been visible to the traveller.

The dew is very heavy on the littoral, and suffices to keep the bush grazing in good condition, though it is insufficient to raise the short grass, which sprouts after rain, and which forms the principal pasture for sheep.

There are nowadays no towns or villages in the Atbai. The Arabs live by families in groups of tents made of dom-palm matting. These, of course, move according as it suits them.

Towns or
Villages.

There are, however, throughout this district, the remains of quite large stone-built villages, formerly inhabited by the miners of the ancients. Those at Deraheib are particularly striking. Deraheib (Der — castle, aheib — beautiful) was evidently at one time the seat of a colony of miners. On the right bank of the wadi are the broken walls of 500 or more houses, arranged in streets. The castle, a large square building, stands under the hills on the left bank. The pointed arches of the castle and portions of some of the houses are set in lime. The majority of buildings, however, are constructed of stone and mud.

Deraheib.

The vegetation, generally, is rare and scanty, though in some of the large wadis, even west of the watershed, it is surprisingly luxuriant. Perhaps the Wadi Alagi, with its fine sayal and heglig and abundant marakh, arak and other green trees, is the most striking instance. West of the Gabgaba, and immediately east of it, selem is chiefly met with, but as one ascends the wadis one comes on sayal and the rare palm, "*Medemia argun*."

Vegetation.

The latter is especially numerous in the Wadis Abaraga and Terfaui, and is found in many other khors in the neighbourhood, especially in those descending from J. Rafit to the Gabgaba.

No adult specimens were noticed east of the Wadi Abaraga, though there are many young plants trying to sprout at Abu Tabag.

This palm is largely used for mat-making, and the Arabs are fully alive to the advantage of preserving it, as well as other trees.

The grazing is not confined to the actual beds of the wadis. There are many flat or depressed places where, for some months after good rain, excellent grazing is found for camels, sheep, and goats.

The rainfall, however, is so uncertain that it is impossible to rely on finding grazing at any particular place even if it has been found there in previous years.

Vegetation
east of
watershed.

The vegetation along the wadis flowing towards the sea varies considerably from that found along those emptying into the Nile. Large trees, such as sayal, selem, heglig and tundub are found along the former, as well as a bush called "adlib," which camels are extremely fond of, "arad," an acacia, growing on the tops of the granite hills that border the littoral, is used by the Arabs to produce the red dye for the leather of sword scabbards, etc. The medicinal qualities of the small undergrowth and grasses of the eastern Atbai are considered by the Arabs far more efficacious than those of the west. A species of gum tree, similar to the "*Ficus elastica*," but with a smaller leaf, exists on the hills of the eastern Atbai; it is known by the Arabs as "gemmeiza."

Water
supply.

Water is scarce throughout the whole district and, where found, is in many places more or less brackish.

The only wells that have been sunk by the present Government are at Nos. 4 and 6 stations, at both of which a plentiful supply is obtained at less than 100 feet depth.

The ordinary water supply consists of regular wells, stone lined for part or all of their depth, rough excavations in the beds of wadis, and accumulations of rain water in cracks or hollows in the rocks. These latter, which are called "makhzans," if large, and "gammam," if small, contain the best water. Those on J. Rafit are particularly well known, and were drawn on for the supply of the garrison of Murrat before the re-conquest of the Sudan.

The largest supply of water is perhaps found in the Wadi Murrat close under the old fort. This, in the pre-Dervish days, was the midway halting place of caravans proceeding from Korosko to Abu Hamed, and very large numbers of camels used to be supplied from the wells at this place. The water is brackish and disagreeable, but drinkable.

Like the Murrat Wells, most of the wells in the Atbai are situated in the beds of wadis and khors, and are consequently filled in every time a flood descends, entailing great labour on the inhabitants, who have to clear them out. This is especially the case with those which are not stone lined. (A list of wells is given on page 92.)

Cultivation.

As may be supposed, the Atbai is not a great agricultural district. In years of good rainfall, however, there is a considerable amount of dura cultivated in the Wadis Alagi, Gabgaba, and Di-ib, etc., but the Arabs rely chiefly on Aswan, and to a lesser extent on Halaib and Suakin for their grain supply. At the former town they find a ready sale for their sheep, which command good prices. The price of a sheep at Aswan is about PT.75, at Suakin PT.25, whilst dura at Aswan only costs from PT.40 to PT.70 per ardeb, whereas at Suakin it is oftener nearer PT.150. Aswan is, therefore, the most popular market with the Arabs of the Atbai.

Roads.

The one main road through this country, that from Korosko to Abu Hamed *via* Murrat, which used to be the artery through which the commerce of the Sudan flowed to Egypt, has fallen into disuse since the construction of the railway, and there are now no other tracks except those made by the Nomad Arabs.

The nature of the country, consisting as it does of masses of very small features intersected by numerous khors, and often separated by plains of considerable extent, lends itself to great freedom of movement in almost all directions. The absence of regular trade, too, has militated against the formation of stereotyped routes, and the result is, that between any two places you can find at least one and very often several more or less different routes, none of which, unless lately passed over by a large party, would appear to the traveller more frequented than the others.

The hilly mass forming the watershed is so far an exception that camel transport from one side to the other is restricted to a few passes.

The tracks, as a rule, are bad and stony; camels, even those bred in the country, soon suffer from sore feet. The tracks usually follow the wadis.

Minerals.

That this country was once, to a certain extent at any rate, rich in gold, is evident from the numerous shafts and traces of former workings that are seen.

Game.

The following species of game are found in the Atbai:—

Ariel: scarce on Wadi Di-ib, but south of Darur, plentiful.

Gazelle (*Isabella and Dorcas*).

Ibex: on hills adjoining littoral.

Cony (native Halidob): hills Red Sea to Murrat.

Wild ass: Onib to Di-ib.

Wild sheep: rare, in hills from Aswan to Abu Hamed, and along the Nile from Murrat to Akasha. Well known to exist at J. Rafit and East of Gabgaba.

Klipspringer and Dig-Dig: hills adjoining littoral south of Bowarti.

Cheetah and leopard: rare in hills near littoral.

Hyena and wild dog

Also bluerock pigeon and sand, rock, and night-grouse on all hills.

ATBAI—SOUTH OF LATITUDE 20° 0'.

From the northern portion of the Atbai the general line of the watershed between the Nile and the Red Sea is south-eastward as far as the hills enclosing the upper part of the Wadi Amur. Drainage.

The hills lying to the north of the Wadi Amur in its upper part form a portion of the watershed.

North of these hills are a series of large khors which drain first north and north-east. Lower down these khors are practically unknown, but are said to curve eastward and reach the sea north of Cape Elba. The largest of these khors are Mahaleit, Dirab, and Haieit. In their upper portions they are broad level valleys covered with a considerable amount of coarse grass. The scrub in them is low and scattered.

South of Wadi Amur the watershed lies north and south in about E. long. 37° 20', until the great Khor Arab basin is reached.

Of the wadis draining westward, south of lat. 20°, Khor Arab has by far the largest drainage area. It includes in its lower portion not only Khor Arab proper, but also Khors Erheib and Thamiam and Baramayu. It may be said to drain the whole triangle of country, whose angular points are Kokreb, Erkowit, and Oi.

Between Khor Arab and Wadi Amur the drainage is taken by Khors Habob and Laiameb, while Khors Misrar and Aderot drain the country between Khor Arab and the Tobrar range.

On the east side of the hills the valleys are narrower and have a steeper fall, and possess well-defined and clean-swept watercourses, which, in the narrower valleys, cover the whole bed of the valley.

The most important of the khors draining west are Khors Garar, Arbat, Okwat, and Adit.

The general course of Khors Garar and Okwat is at right angles to the watershed, and the upper parts of these khors are therefore steep and stony. Khors Arbat and Adit lie parallel to the watershed for a considerable part of their length.

Khor Arbat is the largest of these khors, and, from its watershed, opens out almost immediately into the broad Odrus plain, which the Berber-Suakin caravan road crosses.

Entering the Akareirirba hills, it narrows in, and in the lower part of its course it becomes a defile shut in by steep hills, which rise directly from the sandy and stony bed of the watercourse.

Khor Adit also has its maximum width in its upper part between Sinkat and Jebel Erba, and, narrowing as it descends, joins Khor Okwat through Khor Totali, a winding defile shut in by steep hills, and in places only 200 yards wide.

The minor khors which drain eastward from the hills bounding Khors Adit and Arbat, are steep stony valleys, ending in agabas, strewn with boulders and difficult of passage by loaded camels.

Such are Khors Adaia and Bengar, leading from Khors Arbat and Khors Teiutelri and Abent from Khor Adit.

The khors become ill-defined on leaving the hills, and what vegetation they possess gives place to the low scrub and coarse grass of the maritime plain.

The higher parts of the watershed on the eastern side have a perfect winter climate, and the extreme ranges of Climate. the temperature are less than those of the higher plains of the northern Atbai.

On clear nights in the late autumn and winter a very heavy dew falls, quite sufficient to saturate any bedding or kit left exposed to it.

On the west side of the watershed little or no dew falls.

To the west of the hills the rainy season coincides with that in the Nile Valley, while in the east rain may be expected between November and March, although local thunderstorms may occur at other times of the year.

The winter rain in the western hills is sometimes heavy thunder rain, and at other times a heavy downpour or thick mist, unaccompanied by electrical disturbances.

In the lower parts of the khors, where they merge into open desert, the vegetation is very scanty. It is confined Vegetation to a thin line of scattered scrub which marks the lowest part of the valley.

As the valleys become narrower and more marked the trees are larger.

Selem, samr, and tundub, form the chief part of the vegetation, with gamob in Wadi Amur and a thick belt of "eitil" in Khor Arab, near its junction with Khor Oi.

In the valleys east of the watershed the trees are larger and more numerous. Khor Adit is especially noticeable in this respect, with its large gemmeiza trees near Sinkat well, its thick covering of arak bush along the bed of the valley, and sunt and other trees of considerable size near the watercourse. The steep and stony khors, however, such as Khor Garar and the upper part of Khor Okwat, are in most places swept too bare of earth to allow of the growth of trees of any size.

The grazing on both sides of the watershed is confined to the actual valleys.

The watersheds dividing the westward-flowing khors are low rough ridges of black rock and gravel, and are practically destitute of vegetation.

After rain, there is frequently grazing in the depressions in the atmurs, such as El Gura, near Tendara.

In the khors on the east of the watersheds there is little or no grass until the lower levels are reached, except in the Odrus plain and in the upper part of Khor Adit, near Sinkat.

Water
supply.

Throughout the whole stretch of desert, between the hills and the railway, water is scarce.

Besides those at the well-known halting places on the Berber-Suakin caravan road—Obak and Ariab—the following wells may be noted :—

GARAFAB.—50 miles N.N.E. of Abidia, has several shallow wells among sand dunes.

SARARAT WELL.—In Wadi Amur, is 96 miles from Garafab. The well is 50 feet deep, and is lined with stone, but only gives a small supply. This well is probably the same as that marked on the older maps as the "Oasis of Amur."

South of the Suakin-Berber road the chief wells are as follows :—

TENDERA, MIB, and Oi.—There are several good wells at each of these places.

The Mib wells are specially good, and lie in a hollow of the hills, reached by a narrow defile about $\frac{3}{4}$ of a mile long.

The water supply at Thamiam is very good, but the wells are dug in the bed of the khor and are liable to fill up.

There is sometimes water in the rocks at Rauai, but it was stated not to be sufficient to water a hamla of 80 camels in November, 1902.

Talgwarab is only a water hole 18 feet deep, and cannot be counted on as a supply at present. The natives state that attempts to dig down deeper are prevented by the light soil falling in.

Near the watershed the wells are more numerous. There are four wells in the upper part of Khor Haieit, and several others in the deep valleys through which the larger khors drain into the Haieit, Amur, and Arab basins. In the upper part of Wadi Amur, above Sararat, wells are reported to be about 11 miles apart. On the eastern side, besides the existing wells, water could probably be found at a depth of a few feet anywhere in Khor Arbat. The wells in the lower parts of the khors are frequently brackish. Hoshiri at the foot of Khor Okwat is an example of this.

Cultivation.

In years when the rainfall is good there is a considerable area under dura cultivation in Khor Arab near Talgwarab and between there and Thamiam wells. The natives build numbers of horse-shoe shaped dams to retain the water and keep it standing on the ground. There are also signs of the main khor channel having been dammed to divert the water over the flat earthy soil of the valley.

The upper stretches of Khors Barameyu and Erheib and Hareitri are also used for dura growing.

There is also cultivation near Abu Goloda, on the eastern side in the head of Khor Haieit, in Khor Adit above Sinkat, and especially in the Odrus Plain, dura is grown.

Near the Atbara River there is a considerable area under cultivation in Khor Abadar.

Roads.

Besides the main Berber-Suakin caravan road there are well-marked roads leading to Rauai well.

The Tendara-Mib-Oi road is also a good track and the surface is fairly smooth, except at the approaches to Mib and Oi wells.

The going on the main Suakin-Berber road is distinctly bad in several places, notably at the head of the Kokreb valley, in Wadi Hareitri and in Khor Hadasana.

Near the hills, communications parallel to the watershed are difficult, as for instance between Haieit and Kokreb. Such a line is very hard on camels, as there is a continued succession of deep-cut khors of varying size divided by hills or ridges of loose shale and black rock, steep and difficult to surmount.

The road leading from Khor Haieit to Khor Garar is a fairly easy one for camels, but Khor Garar itself is very rough.

The chief routes across the watershed are :—

From Khor Barameyu to Sinkat—here the gradients are very easy and the surface smooth.

A route westward from Sinkat towards Abu Goloda and Rauai has steep stony "agabas."

From Abu Goloda into the Odrus plain—easy slopes but rough underfoot in the upper part of the Abu Goloda khor. Wadi Hareitri on the Berber-Suakin road—very rough underfoot.

From Wadi Amur into Khor Yudib—many low rough watersheds have to be crossed, and there is no beaten track.

From Khor Arbat the maritime plain can be reached either :—

(1) By the Tamabaf watershed into Khor Okwat.

(2) By Khor Dimm.

(3) By Khor Adaia or Khor Bengar.

Of these the Tamabaf and Khor Dimm routes are easy for camels, but Khors Adaia and Bengar have steep and rough "agabas."

(c) THE BISHARIN.

The Bisharin inhabit the desert bounded on the north, roughly, by the Alagi and its tributaries, on the south by the Atbara, on the east by the Red Sea from Shalatein to J. Asotriba, and thence by a line joining Mitateb or Umbeiba on the Atbara, and on the west by the Nile from the mouth of the Atbara to Abu Hamed, and thence by the old trade route from Abu Hamed to Korosko. Boundaries of Bisharin.

The Ababda and Bisharin formerly lived a good deal further south in the districts now occupied by the Hadendoas; both tribes moved northwards probably about 100 years ago.

The Ababda by their move north, came into a more civilised country. Their Sheikhs, through the transport needed on the Korosko—Abu Hamed road, came into touch with the Government and acquired at this time great wealth, and with wealth, their numbers increased, whilst the Bisharin of the hills, left far behind as regards progressiveness, soon came to be despised by them.

The Bisharin claim descent from Bishar, the son of Kahl, who was also the father of Abad and Amar, from whom the Ababda and Amarar are said to have sprung.

Kahl is said to have been descended from Zubeir Ibn El Awam,* whose wife was a sister of Abbas, uncle of the Prophet. They maintain, therefore, that they are descended from the noble Koreish Tribe. In the genealogy of the tribe, the three principal ancestors are Kahl, Bishar, and Ali Jalan; on this all accounts seem to agree. The present generation of Sheikhs is generally said to be the ninth or tenth from Ali Jalan. Origin.

The descendants of Kahl most likely originally inhabited part of the district now occupied by the Hadendoas, the Bisharin, and Ababda, as stated above, having latterly moved northwards.

The Bisharin are divided into two great families, the Um Ali and Um Naji. The former live in the north, the latter in the south, of their country. Both sections are named after the wives of Ali Jalan, the great grandson of Bishar, who had the following sons:— Sub-division.

By Um Ali.				Tribe.	By Um Naji.				Tribe.
Ali	..	..	..	Aliab.	Hanr	..	..	..	Hanr.
Shanatir	..	..	..	Shantirab.	Eira	..	..	..	Eireiab.
Amer	..	..	..	Amrab.	Nafi	..	..	..	Nafab.
Hamedor	..	..	..	Hamedorab.	Mansur	..	..	..	Mansurab.

ALIAB.—The Aliab, who are far more numerous and wealthy than any of the Um Ali or Um Naji tribes, are divided into the following sub-tribes: Koatil, Mallak, Hamedomerab, Kurbeilab, and Balgab.

The first three named are sometimes classed together and known as the Sararab, on account of their near common ancestry.

The Sheikh of the Koatil has for two generations been the representative Sheikh of these three families; before this the Sheikhship was with the Hamedomerab.

Sub-tribes of the Aliab.

KOATIL.—The Koatil, under Sheikh Isa Abdalla, are a small tribe, and poor. They live at Meshushenai and Terfaui.

HAMEDOMERAB.—Sheikh Mohammed Wad Kurab. This, again, is a small tribe, owning few camels, but good flocks of sheep and goats.

Wadi Meisa, at the head of which is Bir Meisa, is where most of the tribe are to be found during the summer. Their two wells are Meisa and Didaut, close together in the small hills north of the Elba red granite range.

MALLAK.—Sheikh Isa Shingeirab. The Mallak, the third Sararab tribe, is by far the richest, and own many camels, and of a breed which is famous among all the neighbouring tribes. The Mallak own many wells.†

BALGAB.—The next of the Aliab tribes is the Balgab (Isa Abdalla), who live in the hills about Is. They have never, since the time of Abdalla, the father of Isa, had a representative Sheikh, but have always been represented by the Sheikh of the Sararab.

They have good herds of camels, sheep, and goats. They do not frequent the Aswan market as much as the other Aliab sub-tribes, but they sell a great deal to merchants who come from there, and buy much of their corn in good

* In spite of their claim to be of Semitic origin, the Bisharin are not true Arabs and are of Hamitic descent.

† *Vide* list of wells, p. 92.

years from the Di-ib. They are a wilder people than the other tribes and very rarely leave their hills. They are shy and difficult of approach. Their wells are Is and Legia.

KURBEILAB.—Sheikh Mohammed Katul. This is a large tribe. They have many wells, generally in the small tributaries of the upper Alagi.

Katul, Sheikh of the tribe, is by far the ablest man of the Aliab Sheikhs, or, in fact, of any other of the Bisharin Sheikhs.

The traditional "diia" or compensation for loss of life among these Arabs is: for a man, 50 male and 50 female camels; for women or children, or loss of legs, arms, eyes, 25 male and 25 female camels.

Wounds are assessed according to their gravity. The cause in which murders are committed, or a wound is received, is always taken into consideration.

The above amounts are the limit of compensation.

Compensation for murder or wounds.

WELLS.

The following is a list of Bisharin wells in the northern Atbai, showing the sub-tribe to which they belong:—

Sub-tribe.	Name of Well.	Remarks.
(i) UM ALL.		
Koatil	Terfaui	Water good—shared by Eireiab.
	J. Mashushanai	Water in open basin, 12 feet deep—sweet but scarce (December, 1902).
	Umrasin	Not much water, and then only after rain.
Hamedomerab	Meisa	Not open 1903.
	Didaut	
Mallak	Eigat	Water never more than a few feet below surface—sometimes flowing.
	Heilaigabeir	Well 10 feet deep—not much water, rather salt.
	Butna	Good water and plentiful.
	El Eifein	Good water, but supply does not last.
	Abu Dom	Slightly brackish—10 to 15 feet down, according to season.
	Um Gabrit	Good water—not visited.
	Abu Tabag	Stone lined well, 24 feet deep—water plentiful, but slightly brackish.
	Legia	Good water and plentiful.
Balgab	Is	Good water, 4 feet down.
Kurbeilab	Neshd	Water good—camels cannot approach owing to rocks.
	Kamotit	Water good.
	Homeitra	Water in tanks in mountain; also obtainable by digging at base.
	J. Abu Hodeid	Water plentiful—in spring and tanks.
	Um Beshtit	Not always water.
	Jugub	Rarely open, and not much water.
	Derbieib	Hole in side of hill—much water on surface.
	Nasari	1 well, belongs to Amrab—good water, not visited.
	Feireida	Very small supply of good water.
	Miaus	Small supply of good water.
	Shinai	Much water, about 10 feet down.
	El Fauil	Good water, and plentiful supply.
	Kajoj	Much water, near surface—salt.
	Gidimib	?
	Madi	?
Adeloiab... ..	Murrat	Best well is used by the Mining Co.—water very brackish and very aperient. If long stay to be made, water should be obtained from J. Rafit (10 miles).
	Telat Abda	2 wells of 15 feet deep—one brackish. In westerly well, water sweet but scarce.
	Abu Tabag	Stone lined well, 24 feet deep—water plentiful but slightly brackish.
	Naba	Also belongs to Eireiab—much water, 4 to 5 feet down, very salt.
		3 wells about 8 miles apart in bed of wadi.
	Abaraga	Much water—slightly brackish, 10 feet down.
	Maletib... ..	Much water, 15 feet down—brackish.
	Gogaieb	Not much water—very brackish, 8 feet down.
	Girid	Brackish water—rarely open.
	Selala	Well, 35 feet deep—stone lined, 9 feet of water, brackish (December, 1902).

Sub-tribe.	Name of Well.	Remarks.
Shantirab— <i>continued</i> .	Gunnub	Well, 25 feet deep—water sweet, but much polluted by animals (December, 1902).
	Murio	?
Amrab	Hora	Well, 12 feet deep—good water and plentiful.
	Labasoi... ..	Bad water—only fit for camels and goats.
	Sania	Bad water, but plentiful.
	Sohanit... ..	Bad water, but drinkable. Better water from the tanks in neighbouring hills.
	Oni	Water plentiful and good from well, if open. Also from natural tank in rock.
	Beshbesh	Not always open—water good, 10 feet below the surface.
	Eiweb	Good water, and plentiful—8 feet down.
	Dilko	Rain water only—little.
	Nufrium	Good water, and plentiful—6 to 8 feet down.
	Nasari	Good water?
Hamedorab	Oyia	Water near the surface, but not always in the same place (1903).
	Meheiriga	Spring—water rather salt.
	J. Elba... ..	Water plentiful, in springs or wells round its base.
	Halaib	Well, 15 feet deep, near Government Post—water brackish.
	Shellal	Well, 14 ft. deep—very brackish, better from natural tanks 300 feet? deep.
(ii) UM NAGI.		
Eireiab	Naba	Much water, 4 to 5 feet down—very salt. 3 wells about 8 miles apart in bottom of the wadi.
Nafab	El Dueim	Good water and plentiful—about 10 feet down.
	Kamotit	Much water—brackish, 10 to 12 feet down.
	Kamoreib	Good water—plentiful, about 10 feet down.

(d) ABABDA.

The following brief account of the Ababda Arabs, whose country adjoins the Bisharin, is given here, as, although with the exception of the Meleikab section, they are under the Egyptian Administration, they are generally said to have sprung from the common ancestor Kahl (*vide* origin of Bisharin). Feuds, too, between these tribes, though now less frequent, were, until recently, of constant occurrence.

The Ababda, who inhabit the Atbai from roughly north lat. 22° 30', where they adjoin the Bisharin, to as far north as the Kena-Kosseir road, are divided into three main sections or sub-tribes, viz., Eshabab, Fogara, and Shanatir.

Limits.
Three main-
sub-tribes.

(1) ESHABAB.—The Eshabab, which is by far the largest and most powerful section of the Ababda, range practically the whole way from Kena to Ongwat, and share the Kosseir route with the Shanatir. The Sheikhship of this sub-tribe rests with the Gubran family, of which Beshir Bey is the representative. Beshir Bey's residence is at Aswan; he claims to be Nazir of the Ababda, and does not admit any common ancestry with the Bisharin. This sub-tribe is divided into many minor sub-tribes.

(2) FOGARA.—The most important sub-tribe of the Fogara is the Meleikab, part of which sub-tribe belongs to Egypt and part to the Sudan. The Meleikab in the Sudan, who are practically a colony of those in Egypt, range from Korosko to Abu Hamed, but considerable movement goes on between the two sections. The head Sheikh of the Fogara is Abdul Azim Bey of the Khalifa family; his headquarters are at Derau, in Egypt, on the Nile, north of Aswan.

(3) SHANATIR.—The Shanatir share the Kosseir route with the Eshabab, and also live on the river between Aswan and Korosko. Their headquarters are at Sayala. Their hereditary Sheikh is Bashari Bey, who belongs to the Shanatir family. Their largest sub-tribe is the Abudiin.

The feuds before-mentioned are, as a rule, in connection with the wells. The Ababda having gradually moved north, base their claims to wells, now occupied by Bisharin, on the fact that they originally belonged to them, despite the fact that they themselves left them perhaps half a century ago.

Feuds with
Bisharin.

SECTION 3.—SUAKIN AND DISTRICT.

SUAKIN.	The town of Suakin is built partly on an island and partly on the mainland, connected by a causeway, called after the famous General himself: "Gordon's Gate and Causeway." The portion of the town on the mainland is called El Kaf.
Harbour.	<p>The Government offices, official, and most of the larger civilian residences are situated on the island. Many of them are imposing-looking buildings of coral, several stories high.</p> <p>The khor or inlet of Suakin is bordered by a reef of rocks on either side, its length being 2 miles, and its breadth at the narrowest part, 180 yards. At the entrance of the khor there is a depth of 25 fathoms, which gradually decreases towards Quarantine Island to a depth of from 6 to 8 fathoms. The bottom throughout the channel is mud.</p> <p>The harbour will accommodate about 20 vessels without blocking the channel, though as many as 34 vessels, men-of-war and transports, were berthed at one time during the expedition in 1884.</p> <p>Owing to the numerous coral reefs Suakin is a most difficult harbour to enter and to beacon adequately, and would probably never be safe to navigate at night.* For further details, <i>vide</i> "The Red Sea Pilot."</p>
Population.	The population at the present time may roughly be estimated at about 10,500 inhabitants.
Water Supply.	<p>The water supply is from two sources, firstly, from Shaata Wells, distant about $\frac{3}{4}$ mile from the walls of the town, and, secondly, from the pulsometer, which pumps water at the rate of 12$\frac{1}{2}$ tons per hour, from wells $\frac{1}{2}$ mile beyond those of Shaata.</p> <p>This latter water is brackish and is only used as a rule for cooking and washing: it is sold in the town at 1 millieme per can of about 3$\frac{1}{2}$ gallons.</p> <p>Shaata water, on the other hand, is fairly good: it is brought into the town in skins and is sold at 1 PT. per skin in the summer months and rather cheaper during the winter.</p> <p>New condensers to take the place of the old sets which have not been used since 1900 are now (1904) on their way to Suakin.</p>
Rains.	In the neighbourhood of Suakin heavy rains occur at intervals from October to February, with occasional rare storms up to the end of March. In the desert, between Suakin and Berber, torrential rains sometimes fall about July to September. No year passes without rain unless in the extreme north of the Province, where very occasionally there is a wholly dry season. In July, 1896, and in 1903, exceptionally heavy rains took place, filling all the wells, including Obak, almost to overflowing. The total rainfall for the 12 months March (1903)—February (1904) was 114.5 m.m.,† of which 12.4 m.m. fell in May.
Defences.	The part of the town built on the mainland, is entirely surrounded by a high coral wall, built in the old days to resist the attacks of the Dervishes. There is also a line of outer forts about a mile beyond, but since the suppression of Mahdism these have not been garrisoned, and there is now only half a battalion stationed at Suakin.
Time.	Time at Suakin is Cairo time, not local time.
Telegraph cables.	Suakin is connected by Eastern telegraph cable with Aden, Suez, Perim and Obokh, and by Ottoman cable with Jedda. Communication by land is by land lines to Berber and Kassala.
Climate.	The heat at Suakin is very great during June, July, August and September, and the climate is much damper than is usually the case in most parts of the Sudan. The difference between the wet and dry bulb thermometer is often 21°. Sand storms are experienced during summer, when sand fills the air for 40 or 50 miles seaward, rendering objects invisible at a distance of more than $\frac{1}{2}$ mile.
Erkowit.	<p>In January the average daily temperature is about 77° and at night about 73°.</p> <p>Erkowit, the summer headquarters of the Suakin district, is an undulating plateau with low granite hills and easy khors, about 3,000 feet above sea level, and 35 miles from Suakin. The headquarters have now (1904) moved to Erkowit for the third year in succession. The station consists at present of seven houses, built of stone and mud-brick, white washed, which are used as offices and quarters for certain of the employés. A mess-house has been built on the slope of a hill not far from these offices, also quarters or rest-houses, four in number, for the Governor or inspectors or other officers. These are all built of wood with corrugated iron roofing over felt and raised about 1 foot from the ground on iron piping as a protection against the white ant. This precaution has proved to be wholly successful. There is an abundant supply of excellent water from two wells situated in a khor in close proximity to the Government offices.</p>
Water supply.	
Climate.	<p>Erkowit is in telegraphic communication with Suakin during the summer months.</p> <p>The climate of Erkowit in the summer is dry and healthy, a striking contrast to Suakin. In the winter, the hills are wrapped in clouds, and a drizzling mist nearly always hangs over them. In March, the plateau and the eastern</p>

* Chiefly on this account it has been decided to abandon Suakin and construct a harbour and town, etc., at Sheikh Barghut, *vide* p. 95.
† About 4.5 inches.

hill slopes are still clothed with green, the hill sides are covered with bush, ferns, flowers of various kinds, and grass, and the plateau affords excellent grazing.

With regard to the road communications, there are four tracks in use from Suakin :—

Communi-
cations with
Suakin.

(1) *Via* the Sinkat Agaba and Khor Gebet ; three days for loaded camels.

(2) Tamaneb and Khor Arab route, at present easier for lightly loaded camels than the following, but longer, and crossing two agabas, 39 miles.

(3) The Masilli route, on which the very bad portion is fairly short, but the route involves an unnecessary detour and is only practicable for very lightly-loaded camels. Length, 36 miles.

(4) Kolkilai Route: A new road or track has been made this year (1904) up this hillside, which rises over 2,000 feet above the plain below, and it is now possible for hill camels carrying average loads to reach Erkowit without difficulty by this route—length 33 miles. A heavy hamla would still require to come by routes (1) or (2).

Tokar, the next town of importance in the district, 56 miles by road south of Suakin, consists of a fort (built after the defeat of the Dervishes and capture of Tokar in 1891) in which are the Government offices, Mamur's house, post and telegraph offices, etc. There is also a small market place, with a few merchants' houses. It is situated at the mouth of the Khor Baraka, between Jebel Shabba and Jebel Heina, two prominent landmarks. The population is about 3,000. The soil of Tokar is rich, and there are very extensive fields for cultivation—cotton,* dura, dukhn, etc.—but owing to the uncertainty of the Baraka flood, and also to the fact that the country yearly runs a great risk of being devastated by locusts, it is impossible to foretell events or to form an estimate of what the produce of the district will be. One year the harvest may be an extraordinary rich one, the next may prove to be a blank. The Baraka is in flood from the middle of July to the end of September, reaching its maximum about the middle of August.

TOKAR.

Population.
Cultivation.

During the months of June and July, *i.e.*, prior to the Baraka flood, blinding dust storms prevail daily from 9 in the morning till 4 or 5 in the afternoon, and it is impossible to see more than a few yards in front of one. Travellers constantly lose their way and occasionally die on the road between Tokar and Suakin. Formerly convoys and troops moving at that time of year often suffered severe privations.

Dust storms.

In the summer of 1891, a party of cavalry were caught in one of these storms and had terrible experiences, losing many men and horses.

In the winter the climate of Tokar is dry and healthy.

There are many wells, but the water is not of very good quality.

Climate.

Water
supply.

Ras Magdam forms the northern entrance point of the inlet forming the harbour of Trinkitat, about 10 miles inland from which is the town of Tokar. The entrance to Trinkitat is not easily distinguishable, as the coast is low and sandy. Off the entrance lie extensive reefs and shoals. There is good anchorage outside the harbour in about 6 fathoms, under shelter of the reef named Katat Kennasha. The harbour opens to the north-east, is about $\frac{1}{2}$ mile wide, extends $\frac{3}{4}$ mile to the southward, has a depth of 4 fathoms, and is capable of accommodating 20 vessels drawing from 18 to 21 feet ; the holding ground is good. The shores of the harbour are sandy, with low bushes.

TRINKITAT.

About 14 miles south and $\frac{3}{4}$ miles west from Mersa Durur, and 36 miles north of Suakin, is the entrance to Mersa Barghut, useful as a temporary anchorage, and which is to supersede Suakin as a harbour, and the outlet for the trade of the Sudan. This Mersa is named after a chief,† the ruins of whose tomb on the northern point of the entrance is a good sea-mark. The khor is formed by a gap in the coast reef, by which it is also bordered ; its north-western arm extends inland $2\frac{1}{2}$ miles, with depths of from 14 to 18 fathoms, mud for $1\frac{1}{2}$ miles, and then irregular soundings. A small vessel can go up in mid-channel, but could not turn without using warps.

Sheikh
Barghut
(Barud).

The western arm extends about $\frac{1}{2}$ mile, and shoals gradually ; there is a donga at its head trending more than a mile in a south-westerly direction, in which, during the wet season, there is fresh water, but, in the summer, only a shallow tidal drain.

The tomb on the northern entrance point is more in the shape of a cottage than of the ordinary Arab tombs, and its summit, being about 25 feet above the sea, can be seen from the masthead of a vessel from a considerable distance.

Directions.

There is good anchorage in 14 fathoms near the entrance of the north-western arm with the tomb, bearing about south-east by east. Here there is room for three vessels of moderate size at single anchor.

No supplies of any kind can be procured, but there are some springs of good water on the southern side of the khor, about a mile from the beach. Fish may be obtained by the score in the western arm. Game is plentiful, but somewhat wild.

Supplies.

The remaining stations of importance in the district are merely police posts, consisting of a fort, garrisoned by police, with a small Arab community living in grass tukls close by. These are : Halaib, Mohammed Gul, and Agik,

Police posts,
&c.

* In 1903-04, 7,425 feddans were under cotton cultivation and yielded 29,039 kantars which realised £E.25,873, or an average of 89·1 P.T. per kantar.

† Barghut = fleas. The new name for Sheikh Barghut is "New Suakin."

all on the Red Sea, and Karora, inland. Halaib is the most northern, and is near the frontier of Egypt. Karora is the post on the Sudan-Eritrean frontier, about 28 miles from the Red Sea. There are about 1,000 feddans of cultivable land between Karora and the sea on the northern side of the Sudan boundary of which the natives take advantage, though not to any great extent.

Game.

In different parts of the Suakin district the following species may be found : Kudu, oryx (beisa), ibex, wild sheep, klipspringer, ariel, gazelle (*Dorcas* and *Isabella*), dig-dig, hare, bustard. Lion, leopard and cheetah are rare. There is good sea fishing at Suakin, which is famous for its so-called lobsters, which are really large crayfish.

NOMAD ARABS AND TRIBES.

It is quite impossible to arrive at anything like an accurate number of the population of the Arabs in this district, but 50,000 is a fair estimate. *Vide* Appendix F.

The majority of them live right in the interior of the hills and are constantly on the move, here, there, and anywhere, wherever rain happens to have fallen or grazing is plentiful.

A journey, no matter how far, is nothing to them ; their houses, consisting simply of straw mats stretched over curved sticks, can be put up or pulled down in a very short time. Their families, wives, children, and belongings, are put on what camels and donkeys they possess ; cattle, sheep, goats, etc., are driven on ahead, and so the caravan proceeds, sometimes for a whole month and more, sometimes for only a few days.

The chief tribes are the Amarar and the Hadendoa, both of which have many sub-tribes. There are also the Beni Amer, Bisharin, Ashraf, Shaiab, Habab, Komilab, Arteiga, and Rasheida, who came originally from Arabia and now live partly on the Atbara in Berber Province and partly near Agik. They were until recently much addicted to slave running.

For detailed list of Nomads, *vide* Appendix F.

RED SEA LITTORAL-SUAKIN DISTRICT.

The coast of the Suakin Province extends from Suakin to N. Parallel 22° on the north, and from Suakin to Ras Kasar on the south, *i.e.*, roughly about 500 miles in all. The coast from Sheikh Barghut to Suakin is quite low, being composed entirely of raised coral reef, furrowed by khors which contain water only in the rainy season.

There are several small inlets and creeks where dhows can anchor all along the coast, but the chief harbours, in addition to those already described, are as follows :—

On the North.

Halaib.
Rowaya.
Mohammed Gul.
Darur.
Gezira Abdalla.

On the South.

Heidob.
Ras Magdam.
Agik.
Adobana.
Ras Kasar.

At all of the above harbours, except Gezira, Abdalla, Heidob, and Ras Magdam, fresh water can be found a short way inland.

Most of the entrances to the harbours are narrow, and require careful navigation ; moreover, they are in every case guarded by coral reefs, and as they are not at present (1904) lighted, they cannot be entered at night.

SECTION 4.—COUNTRY BETWEEN THE BERBER-SUAKIN ROAD, THE ATBARA, AND THE ABYSSINIAN AND ERITREAN FRONTIERS.

(a) COUNTRY BETWEEN BERBER-SUAKIN ROAD AND LATITUDE OF KASSALA.

General description.

Kassala and Adarama are, with the exception of a few small outlying hamlets near the former and the one diminutive Hamran village on the Setit, the only permanent towns or villages in Sudan territory east of the Atbara. Nearly the whole of this country, except that near Kassala and south of it, belongs to the Hadendoas, who range from the Atbara to Suakin.

Country north of Kassala.

Adarama, on the Atbara, about 78 miles above its junction with the Nile, once the headquarters of the redoubtable Osman Digna, but now almost deserted, consists of little more than a few tukls, and the walls of the mud houses of the Dervish town.

The following general description of the country between Adarama and Kassala is taken from a report by Captain A. C. Parker, who traversed this country in April and May, 1901.

"Lying to the north of Kassala, and bounded on the east by the range of hills along which the frontier is delimited, and on the west by the river Atbara, stretches a vast plain of almost unbroken continuity.

"From Goz Regeb to a point on the river west of Kassala the country inland consists of, first, a broad strip of cotton soil, sparsely sprinkled with small trees and bushes. To the east of this there occurs a stretch of more or less sandy soil, supporting a coarse grass and a few stunted isolated trees until the fertile soil adjoining the Khor El Gash is reached.

"This khor, after passing the town of Kassala and receiving numerous small khors from the east, conveys its flood water in a more or less defined channel, or in some places channels, as far as Filik. Along its banks, north of Kassala, dom palms are replaced by thick tamarisk or tarfa trees, which continue most of the way to Filik, on nearing which they in turn are replaced by tall and other thick thorn scrub.

"A short distance north of Filik, owing to the extreme flatness of the country, the eastern channel disappears, and the water dissipates itself through the soil to a distance varying according to the volume of the flood water, its direction being roughly N.N.W.

"The opinion, still held by some, that the Gash water flows towards the Langeb seems untenable.

"The Odi plain which receives numerous small khors from the eastern hills is probably about the same level as the Gash plain, but there certainly appears to be sufficiently rising ground between, though hardly noticeable, to preclude the Gash reaching Odi.

"From Filik, following the direction of the Gash, the bushes which define its course gradually decrease until they become as scattered as in the rest of the plain, and all trace of its direction is lost.

"The plain still extends northwards, until at a point, said to be not far from Jebel Safra, it receives the waters from the Angwatiri and Godamaieb khors, which join here, and probably that of other khors flowing in a south-westerly direction from the rocky hills to the north-east. From these hills also many khors start in an easterly and south-easterly direction, which finally reach the Odi or the Langeb.

"From J. Sanai northwards, for some distance the country consists of large ranges of hills, separated by wide valleys, containing very often stretches of cotton soil in the wider parts, but close to the hills the ground becomes rocky and stony.

"From these valleys, the khors, some of which are lined with dom palms, trend in a south-westerly direction, but in nearly every case are hemmed in by sand hills, and are thus prevented from reaching the Atbara. The valleys, or rather basins, where the final exit is stopped, being usually selected by the Arabs to cultivate.

"Of these valleys the principal are Hegerib, Todabanob, and Hambokeb.

"Wells, the locality of which depend largely on the rainy season or local thunderstorms, are fairly plentiful throughout the whole of the country traversed by these khors, and supply water for numerous sheep and goats, and in some places a few cattle, grazed by Hadendoas of the Gemilab, Haikolab, Amerab, Shebodinab, and other tribes.

"A small party mounted on camels may travel through this country at any time of the year without fear of inconvenience from lack of water. After the rains, pools of standing water will be met with in many places.

"The Gash itself, according to native tradition, has an exit to the Atbara near Adarama, and it is very possible that the waters of the northern Gash plain, called by the Arabs Gash Dai, may have a channel meandering through the hills formed by the rush of water in exceptional years."

(b) KASSALA.

Kassala is situated on the right bank of the Khor Gash, 1,735 feet above the sea, and lies 15 miles west of the nearest point on the Italian frontier, which is near Sabderat. The twin Jebels, Mokram and Kassala, rise abruptly from the plain 3 miles to the east and south-east. The highest of the peculiar dome-shaped protuberances of the latter is 2,600 feet above the town, and is usually visible at a distance of 60 or 70 miles. There are several perennial springs in the mountain.

Beyond the fort built by the Italians, the barracks, and the various other Government buildings, etc., there are Town. few brick buildings in Kassala, as the native part of the town is constructed chiefly of grass tukls. There are two or three fair stores kept by Greeks, where most tinned provisions and other small requirements are obtainable, and at least one of these is licensed to sell liquor.

The normal garrison consists of one regular battalion, six (late Italian) 9 cm. Krupp guns, four Nordenfeldt, and four Garrison. Gardner machine guns. In addition, there is a battalion of Arab irregulars, recruited locally, chiefly from Beni Amers,