HANDBOOKS PREPARED UNDER THE DIRECTION OF THE HISTORICAL SECTION OF THE FOREIGN OFFICE.—No. 98

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ANGLO-EGYPTIAN SUDAN

LONDON:
PUBLISHED BY H.M. STATIONERY OFFICE.

1920

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Editorial Note.

In the spring of 1917 the Foreign Office, in connection with the preparation which they were making for the work of the Peace Conference, established a special section whose duty it should be to provide the British Delegates to the Peace Conference with information in the most convenient form—geographical, economic, historical, social, religious and political—respecting the different countries, districts, islands, &c., with which they might have to deal. In addition, volumes were prepared on certain general subjects, mostly of an historical nature, concerning which it appeared that a special study would be useful.

The historical information was compiled by trained writers on historical subjects, who (in most cases) gave their services without any remuneration. For the geographical sections valuable assistance was given by the Intelligence Division (Naval Staff) of the Admiralty; and for the economic sections, by the War Trade Intelligence Department, which had been established by the Foreign Office. Of the maps accompanying the series, some were prepared by the above-mentioned department of the Admiralty, but the bulk of them were the work of the Geographical Section of the General Staff (Military Intelligence Division) of the War Office.

Now that the Conference has nearly completed its task, the Foreign Office, in response to numerous enquiries and requests, has decided to issue the books for public use, believing that they will be useful to students of history, politics, economics and foreign affairs, to publicists generally and to business men and travellers. It is hardly necessary to say that some of the subjects dealt with in the series have not in fact come under discussion at the Peace Conference; but, as the books treating of them contain valuable information, it has been thought advisable to include them.

It must be understood that, although the series of volumes was prepared under the authority, and is now issued with the sanction, of the Foreign Office, that Office is not to be regarded as guaranteeing the accuracy of every statement which they contain or as identifying itself with all the opinions expressed in the several volumes; the books were not prepared in the Foreign Office itself, but are in the nature of information provided for the Foreign Office and the British Delegation.

The books are now published, with a few exceptions, substantially as they were issued for the use of the Delegates. No attempt has been made to bring them up to date, for, in the first place, such a process would have entailed a great loss of time and a prohibitive expense; and, in the second, the political and other conditions of a great part of Europe and of the Nearer and Middle East are still unsettled and in such a state of flux that any attempt to describe them would have been incorrect or misleading. The books are therefore to be taken as describing, in general, *ante-bellum* conditions, though in a few cases, where it seemed specially desirable, the account has been brought down to a later date.

G. W. PROTHERO,
General Editor and formerly
Director of the Historical Section.

January 1920.

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I. GEOGRAPHY PHYSICAL AND POLITICAL

(1) Position and Frontiers

The Anglo-Egyptian Sudan is a region of north-eastern Africa, lying approximately between 4° and 23° north latitude and 21° 30′ and 30° east longitude. It is bounded on the north by Egypt; on the east by the Red Sea, Eritrea, and Abyssinia; on the west and south-west by French Equatorial Africa; and on the south by Uganda and the Belgian Congo.

The country has (1918) a total approximate area of 1,024,000 square miles, and is divided into the following provinces:—

Halfa, on the Egyptian frontier, 112,300 square miles.

Berber, on the right bank of the Nile from the north-east frontier to Khartum, 98,600 square miles.

Red Sea, comprising the coastal mountains and plain, 27,200 square miles.

Dongola, west of the Nile, between Halfa and Kordofan, 124,300 square miles.

Khartum, at the junction of the White and Blue Niles, 4,600 square miles.

White Nile, comprising the river zone between 12° and 15° 30′ north latitude, 13,300 square miles.

Blue Nile, comprising the eastern Gezira and river zone to about 16° north latitude, 12,000 square miles.

Kordofan, the central region lying west of the White Nile and north of the Bahr el-Ghazal, 113,700 square miles.

Nuba Mountains, between southern Kordofan and Upper Nile, 32,200 square miles.

Kassala, on the eastern frontier between 13° and 17° 30′ north latitude, 44,900 square miles.
Sennar, the region east of the White Nile between 9° and 14° north latitude, 38,700 square miles.
Upper Nile, comprising the river zone between 8° and 12° north latitude, 36,200 square miles.
Bahr el-Ghazal, between Kordofan and the south-western frontier, west of the Nile, 114,100 square miles.
Sobat-Pibor,[1] between the Bahr el-Jebel and the Abyssinian frontier north of 6° north latitude, 24,400 square miles.
Mongalla,[2] between 6° north latitude and the Uganda frontier, 63,800 square miles.
Darfur, between Kordofan and French Equatorial Africa, 153,300 square miles.

A certain unity is given to this vast country by the upper and middle valley of the Nile, which traverses it from south to north, and forms a great natural line of communication over 2,000 miles in length, linking the region of the equatorial lakes with Egypt and the Mediterranean.

In the north, the boundary dividing the Sudan from Egypt, as agreed by the British and Egyptian Governments in 1899, runs from a point as yet undetermined in the Libyan Desert to the Wadi Gabgaba along the parallel of 22° north latitude. North of Wadi Halfa, however, a small enclave extends 20 miles north to Faras Island. East of Wadi Gabgaba the line is defined by a series of mountain summits as far as Bir Shalatein on the Red Sea coast (23° 10′ N., 35° 35′ E.).

The eastern frontier is formed by the Red Sea from Bir Shalatein to 18° north latitude. Thence the section between the Sudan and Eritrea runs in a general south-

[1] Strictly, this is a military district, not a province. It is announced (March, 1919) in Army Orders (Khartum) that the Upper Nile and Sobat-Pibor Districts are to be amalgamated and known as the Upper Nile and Pibor District; headquarters of the district to be at Akobo.

[2] Including the old Lado Enclave.

westerly direction to the confluence of the Baraka with the Dada, which is followed to its source at about 37° east longitude and 17° north latitude. Thence it runs generally south by Jebel Benefer (16° 30′ N.) to Jebel Anderaib (15° 14′ N.). Crossing the Wad Gash it then runs to the bend of the Setit opposite the mouth of the Khor Royan (14° 15′ N.).

From this point the frontier between the Sudan and Abyssinia runs south-south-west to the Atbara at Gallabat, thence south to Jebel Magbara, where it turns and runs west for 35 miles to the Rahad. From here it again runs south-south-west, crossing the Blue Nile near Bumbode. At 10° 40′ north latitude it turns north-west to Jebel Kashangaro and then again continues south by Jebel Gemi (9° N.) to the Khor Jokau or Garre, which is followed to its confluence with the Baro. Thence the frontier is formed by the Baro, Pibor, Akobo, and Kaya south-south-east as far as a point 35° east and 6° north; thence it curves south-east by Wad Kibish to the Sanderson Gulf in the north-west of Lake Rudolf. The latter part of this line, from the junction of the Sobat and Pibor down to Lake Rudolf, is provisional only, and has not been ratified.

The southern frontier, dividing the Sudan from Uganda, runs west from a point on the Sanderson Gulf about 4° 30′ north for about 110 miles. It then runs in a generally south-western direction to Nimule on the Bahr el-Jebel. From Nimule, the boundary follows the west bank of the Bahr el-Jebel to the mouth of the Kaju River, which is followed to its source; it then runs to a point on the River Kaia which is as yet undetermined, and up the Kaia to the Nile-Congo watershed.

As defined by the Agreement of 1894, the western boundary, dividing the Sudan from the Belgian Congo, begins at this point, and runs north-west along the Nile-Congo water-parting to about 5° north latitude. From this point, where French Equatorial Africa succeeds the Belgian Congo as the western neighbour

of the Sudan, the boundary, as defined by the Anglo-French Agreement of March 1899,[1] and the supplementary convention of September 8, 1919, continues to follow the watershed to 11° north latitude. From 11° to 15° north latitude it runs to the junction of the Wadi Azum and the Wadi Kaja; follows the latter to the Wadi Azunga, which it follows to a point north of Jebel Kudri to be fixed by the Boundary Commission; then turns N.E., N. and N.W. to a point about half-way between the 15th and 16th parallels, where it turns due E. until it reaches long. 24°, which is the eastern limit of the French sphere; it then turns N. and follows that degree of longitude until its intersection with parallel 19° 30′ of north latitude.

It will be seen that the frontiers dividing the Sudan from Egypt in the north and Uganda in the south are purely artificial, corresponding with neither racial nor geographical divisions; and their exact position is of little or no importance. The eastern frontier, on the other hand, is exposed to certain disadvantages, including that of leaving the head-waters of the great Nile affluents outside Sudan territory.

(2) Surface, Coast, and River System

Surface

Such unity of character as the Sudan possesses is given to it by the Nile valley, which forms its chief natural feature. The country is best conceived as a great plain or shallow depression, extending north from the equatorial lakes to the Egyptian frontier, and comprising successive zones of swamp, steppe, and desert. This plain is bounded to the west by the hills of the Nile-Congo watershed and the highlands of Darfur (8,000–9,000 ft.), and to the east by the Abyssinian tableland and its continuation in the Red

[1] The actual wording of the Agreement is self-contradictory; see *Italian Libya*, No. 127 of this series (cf. also below, pp. 34, 35).

Sea range (6,000–8,000 ft.). From about the 12th parallel northwards, these hill-systems retreat further and further from the river, leaving a vast plain which increases in width from south to north, finally becoming continuous with the Sahara. Through this flow the Nile and its great tributaries, draining a total area of nearly three-quarters of a million square miles.

The country is best considered as falling into three divisions: the desert, the intermediate zone, and the tropical swamps and forests.

(1) The desert extends south from the Egyptian frontier to about the 18th parallel eastward of the Nile and the 16th westward of it. It is really an eastward extension of the Sahara, but is divided by the shallow valley of the Nile into the Libyan Desert to the west and the Nubian Desert to the east. The Libyan Desert, still imperfectly known, is a sandy uninhabitable waste, waterless except for the Nile and a few oases.

The Nubian Desert is a more rugged and rocky district with an average elevation of 1,500 to 3,000 ft. above sea-level, stretching from the Nile to the Red Sea mountains and bounded to the south by the Atbara–Port Sudan railway. East of the Halfa–Khartum railway, the desert is known as the Atbai. It is bounded to the east by the Red Sea range, a spur of the Abyssinian highlands averaging 6,000 to 7,000 ft. in height, which separates it from the coastal plain. From its centre a number of deeply-cut *khors* (see p. 100), often fertile and luxuriously wooded, and divided by ridges of rock and shale, run both to the Nile and to the Red Sea.

(2) South of the desert, a region consisting of Kordofan and Darfur on the west and the district between the Atbara-Port Sudan railway and the 12th parallel on the east forms a well-marked transitional zone. Northern and central Kordofan consist chiefly of undulating and badly-watered plains, sandy and arid in the north, moister and more fertile in the south. Northern and north-eastern Darfur are similar in character to southern Kordofan. In central Darfur

is the great volcanic massif of Jebel Marra (9,000 ft.). South and south-west of this the country is more fertile and better watered, while east of the Nile the soil is of a much richer type, being especially so near the frontier (Tokar, Kassala) and in the rich alluvial tracts of the Gezira between the Blue and White Niles. The so-called Isle of Meroe, between the Atbara, Blue Nile, and White Nile, exhibits all the varying features of the transitional zone, while in the Gezira the Sudan reaches its highest point of potential fertility.

(3) The tropical zone, between the 10th parallel and the Uganda frontier, consists of a wide and shallow depression, bordered to the west and south by the Dar Fertit hills, the plateau of the Nile-Congo watershed, and the mountains of the Uganda frontier, and to the east by the outlying south-westerly spurs of the Abyssinian highlands. The greater part is clothed with savannah, open forest, and bamboo jungle. The bottom of this basin, especially between the Bahr el-Ghazal and Bahr el-Jebel, is permanently waterlogged and forms a large swamp area. East of the Bahr el-Jebel, much of the Sobat-Pibor and Mongalla districts consists of marshy grass-land, forming a savannah swamp during the wet season, but parched and sterile in the dry months. On the Uganda border this gives place to a group of rugged granite mountains rising in the Imatong range to over 9,000 ft. in height. This region is still imperfectly known.

Coast

The coast line, from Bir Shalatein to Ras Kasar, is about 400 miles long. The only bays of importance are Dongonab or Dokhana (at about 21° N.) and Akik, north-west of Ras Kasar. The shores are low, and consist mainly of coral furrowed by numerous streams (*khors*). The coastal plain, varying in breadth from ten to twenty miles, rises gently to meet the well-defined foothills of the Red Sea range. Twenty-seven miles south of Suakin the mountains approach the

shore and then turn sharply to the south-west, bordering the wide and fertile plain of Tokar, which extends nearly to the Eritrean frontier.

Throughout its length the coast is fringed by coral reefs and shoals, offering considerable obstacles to navigation. The most important formation of the kind is the Suakin group, an archipelago of reefs, rocks, and islets extending from about 18° 21′ to 19° 27′ north latitude, at an average distance of ten miles from the shore. There is a deep, broad channel between this group and the mainland.

River System

With hardly any exception the whole Sudan is drained by the great system of the Nile and its tributaries. The waters of the White Nile have been called with justice the "life blood of the country." From Nimule, where these waters enter the Sudan, to Halfa, where they leave it, they have a course of over 2,000 miles, nearly the whole of which is navigable at all times of the year.

The Nile.

(*a*) *General Description.*—The Nile system consists of two elements: (i) the swamp-rivers of the south and south-west, i.e., the Bahr el-Jebel, Bahr el-Ghazal, and their tributaries, contributing a comparatively small but constant volume of water throughout the year; and (ii) the flood-rivers descending from the Abyssinian plateau—i.e., the Blue Nile, Atbara, and Sobat, which bring down a great volume of water after the rains, but little or none in the dry season.

The latter are by far the most important, and their fluctuations cause enormous changes in the character both of the main stream and of the country surrounding it.

(i) The Bahr el-Jebel, draining the equatorial lakes, and the Bahr el-Ghazal, fed by the network of

streams which descend from the Nile-Congo watershed and Dar Fertit hills, unite at Lake No (9° 30′ N.) to form the White Nile. They furnish practically the whole summer discharge of the Nile, but only one-twentieth during the flood period. At Lake No the Bahr el-Jebel discharges about 300 cubic metres per second at all seasons, the Bahr el-Ghazal only 12 to 30, whilst the White Nile at Khartum, above the Blue Nile confluence, discharges 300 cubic metres per second at the low-water period, but 1,600 to 1,800 at the top of the flood, this increase being chiefly provided by the Sobat, the most southerly of its great flood tributaries.

(ii) The most important of these flood tributaries is the Blue Nile (Bahr el-Azrak). This is the name given to the lower course of the Abbai, which drains practically the whole centre of the Abyssinian tableland. Issuing from Lake Tsana (5,770 ft. above sea-level), it flows for 535 miles through Abyssinia, receiving numerous tributaries. It enters the Sudan at Kiri (35° E., 11° 12′ N.), and joins the main river at Khartum. A mere trickle in the winter, it becomes during the summer and autumn a swift torrent, bringing down an immense volume of water and silt from the Abyssinian tableland. Its maximum discharge at this time is 10,000 to 12,000 cubic metres per second, and it contributes a quantity of water and fertilising matter greatly exceeding that of all the other branches and tributaries of the Nile system. The difference between the flood and low-water levels is 20-23 ft.

The Atbara, which also rises in the neighbourhood of Lake Tsana, enters the Sudan at Gallabat and the Nile near El Damer. The river is only a succession of pools in winter; but it begins to rise in June, and by August discharges 3,000 cubic metres of water per second, heavily charged with silt. The Sobat River (Bahr el-Asfar, or Yellow River) is formed by the confluence of the Baro and its tributaries, draining the southern part of the Abyssinian plateau, with the Pibor and its tributaries, draining the plains and

swamps east of the Bahr el-Jebel. These two rivers unite on the Sudan-Abyssinian frontier, whence the Sobat flows north-west through alluvial plains to its junction with the White Nile, fifty-six miles above Kodok (Fashoda). The river discharges about 900 cubic metres per second at flood time in October, sinking to 45 in mid-April, before the rise begins. The Nile, swollen by all these tributaries, has, at Berber, a maximum discharge in full flood of 14,000 to 16,000 cubic metres per second.

Emerging from the northern end of Lake Albert, and flowing north, the Nile, here known as the Bahr el-Jebel (river of the mountains), enters the Sudan at Nimule. The reach between Lake Albert and the frontier being navigable, the Sudan Government has reserved a small enclave south of Nimule to act as a port of trans-shipment between Uganda and the Sudan. Four miles north of Nimule the river enters the Fola Rapids, and thence it continues with a turbulent course through rocks and rapids to Lado, where the Sudan plain is entered and the character of the river completely changes. From this point to Lake No (about 500 miles) it winds slowly among vast swamps, giving rise to a labyrinth of channels and lagoons, which change after every flood and make skilled pilotage essential. This is the so-called *sudd* area. Its full extent is unknown, since it has not been fully explored, but its area probably exceeds 35,000 square miles.

The word *sudd* (" block "), popularly applied to the Nilotic swamps, really belongs to the great masses of vegetation which break from them during the stormy season, under the combined influence of gale and flood, and drift into the lagoons and ultimately the river channel. This *sudd* consists chiefly of papyrus and reeds, with the soil in which their roots are embedded, and forms huge floating islands which ground when they reach a shallow and quickly root in the muddy bottom. Each fresh mass arriving is sucked underneath the first, until the whole becomes wedged

into a solid block, often having an under-water thickness of 15 or 20 ft. These blocks, which may be upwards of a mile in length, dam the main channel, cause the flooding of surrounding marshes, and prevent navigation. They constitute a great danger to shipping, as a steamer caught amongst them is exposed to the risk of being crushed, and is certain to be imprisoned for an indefinite period. Of recent years, however, supervision during the stormy season has kept the river open to traffic.

At a point about 7° 12′ north latitude the river throws off from the right bank a branch called the Bahr el-Zeraf (river of giraffes), really a relief channel for the floods when the main stream is blocked by *sudd*. The Zeraf runs through little-known and inaccessible swamps for over 200 miles, and rejoins the White Nile fifty miles below its confluence with the Bahr el-Ghazal.

The Bahr el-Ghazal joins the Bahr el-Jebel at the west end of Lake No (9° 29′ N.), and on issuing from this lake the river, henceforth called the White Nile (Bahr el-Abiad) flows east for ninety-six miles in a sluggish stream, broken by many islands and backwaters, to the confluence of the Sobat (9° 20′ N.). Thence to Omdurman (516 miles) it receives no more perennial affluents. The only obstacle to navigation on this long reach is the Abu Zeid ford (13° N.), where the water sometimes falls as low as 2 ft. At Khartum the combined stream of the White and Blue Niles is about three miles wide; and between this point and Halfa, after receiving the waters of the Atbara below El Damer (17° 32′ N.), it attains its greatest volume. The Island of Argo, between Dongola and Kerma, is perhaps the most fertile spot in the Sudan.

The whole stretch of 946 miles between Khartum and the northern frontier is full of reefs and rapids, and contains five of the six great cataracts, which are caused by the volume of flood-water having eroded the bed of the river and brought to the surface numerous dykes and ridges of volcanic rock. Navigation here

is therefore dangerous, and in places impossible, and the greater part of the traffic goes by rail from Halfa to Abu Hamed or Khartum.

(*b*) *Floods.*—The floods, which are the most important feature of the Nile system, depend upon the rains of the Abyssinian tableland. The effect of these rains is first felt on the Sobat at the end of April, and on the Blue Nile and Atbara about a month later. The Bahr el-Jebel and Bahr el-Ghazal begin to rise about the same time, and the total effect on the Nile system is felt at Halfa about mid-June. The rise here attains its maximum about September 5, when the mean height is 7·94 metres, after which the river sinks gradually, the lowest reading, 1·40 metres, being obtained about June 1.

(*c*) *Cataracts.*—Between Khartum and Assuan (Aswan), a distance of 1,124 miles, there are 351 miles of broken water and rapids, commonly called the Cataracts. Full details with regard to these are given below (p. 75).

Other Rivers.

Two other rivers are the Gash and Baraka, both rising in the Eritrean highlands. The Gash, entering the Sudan between the mountains of Anderaib and Abu Gamal, passes Kassala, where the bed is 150 yards wide, and then spreads out and loses itself in the alluvial plain north of the town, which is fertilized by its silt. So, too, the Baraka, entering the plain of Tokar from the south, spreads out to form a delta, the waters of which seldom reach the Red Sea, but deposit a fan of rich alluvial soil. Both these rivers flow only between the beginning of July and the end of September, on an average 80 days in the year.

With the exception of comparatively small areas of open water, such as Lake No, in the *sudd* region, and Lake Abiad, in the Nuba Mountains province, there are no lakes in the Sudan.

(3) Climate

The climatic conditions of the Sudan range from Saharan conditions in the north to equatorial conditions in the extreme south. North of Khartum the Nile valley and desert are practically rainless, though intermittent winter rains fall on the coast. Khartum itself has an annual mean of 4·76 in. (120 mm.); Suakin, on the coast, one of 7·95 in. (202 mm.). South of this region the summer rains begin, increasing (*a*) with decrease of latitude and (*b*) with the proximity of the Abyssinian plateau. The mean at El Obeid is 15 in. (381 mm.), at Roseires 28·34 in. (720 mm.), and at Kassala 12·60 in. (320 mm.). In the extreme south-east the climate is of the full equatorial type, with rains lasting from February or March to October or November, and falling with special heaviness in spring and late autumn. Kodok has a mean of 29·76 in. (755 mm.) and Mongalla of 36·93 in. (938 mm.).

Since the whole country lies within the tropics, the mean temperature is high. The summers are hottest, winters coldest, and diurnal variations widest in the north. Thus at Berber 120° F. (49° C.) in the shade has been registered in June, whilst in January the thermometer may fall to 50° F. (10° C.). Khartum has a mean maximum (June) of 107·8° F. (42° C.) and a mean minimum (January) of 58° F. (14·5° C.). In the highlands of Darfur and in the Upper Nile valley altitude and moisture moderate the heat. The diurnal range, which is considerable, varies from 29·8° F. (16° C.) at Wadi Halfa to 22·9° F. (12·5° C.) at Mongalla. North of the twelfth parallel May and June are the hottest months; in the equatorial zone, November and January.

The north-east trades blow steadily in the interior of the northern Sudan, seldom backing beyond north-west. At Suakin and Tokar, on the coast, variable winds with violent and often dangerous sand storms prevail between June and August. South-west winds are normal

in this region in August and September, north and north-east during the rest of the year. In south Kordofan south winds prevail from April to September, north and north-west in the winter months; whilst in the Bahr el-Ghazal the south-west monsoon blows from May to October, the north-east trades during the rest of the year. In the extreme south the equatorial region of calms and light variable airs is reached.

(4) Sanitary Conditions

On the whole the northern or Saharan and steppe regions of the Sudan are healthy and suited to Europeans, provided that ordinary precautions are observed. Owing to the enormous variations of temperature care must be taken to guard against night chills and exposure to the sun. Sanitary conditions in the towns have been much improved since the British occupation. Khartum, where typhus, cholera, and malaria were once endemic, is now one of the healthiest towns in the world, with a death-rate (1912) of about 9 per thousand. Omdurman, which had an evil reputation as the home of typhus, cerebro-spinal meningitis, and other diseases, has also been cleansed. In other Sudan towns, however, all water must be boiled to guard against the ever-present typhoid and dysentery; a precaution even more essential in the tropical region, where guinea-worm and other horrors await those who neglect it.

The most prevalent disease in the Sudan is undoubtedly malaria. Europeans and Egyptians are specially liable to attack, and should take quinine daily as a routine precaution in all districts south of Khartum, at least during and after the rains. In the Bahr el-Ghazal and *sudd* region generally malaria rages from April to December, and here the malignant type and blackwater fever are prevalent. June and July are the worst months, and stations near the rivers are the most affected. Wherever possible, camps and settlements should be made on high ground at a distance from the bank, and water obtained from wells.

Among the negro population leprosy, bronchial complaints, pneumonia, and various tropical diseases, such as guinea-worm, are common, but sleeping sickness, though a few cases have occurred in the extreme south, has not yet obtained a foothold in the Sudan. Venereal diseases have been imported from the north, and are common near the Government posts. A peculiar infectious disease called *kala azar* exists in the east, its range extending southwards from Kassala to about 10° north latitude, and west to about 33° 30′ east longitude. It is characterised by fever and wasting, and appears to be spread by vermin. The natives are chiefly liable to attack, though Europeans are warned against sitting or sleeping in native huts in the infected areas.

The chief scourge of the Arabs is syphilis, especially in Kordofan. Smallpox, which formerly broke out at intervals with great virulence, is now much diminished. Cerebro-spinal fever, however, still gives trouble, a severe epidemic having occurred in 1915.

(5) Race and Language

Race

The wealth of the Nile valley has made the Sudan from earliest times peculiarly liable to invasion; hence the original stocks have been overlaid by successive waves of immigrants, and the country is now a Babel of numerous races and tongues. The principal incursions have been those of black races from south and west, and of Arabs from the east. These have intermarried with and frequently been absorbed by the aboriginal population, the result being a mixture of races which makes classification unusually difficult. Speaking generally, the desert zone in the north is now peopled by nomadic Hamites and Arabs, the central region by Arabs, Nubas, and negroids, the tropical belt south of the twelfth parallel by negroes. The change of type, how-

ever, is gradual. Negroes have descended the Nile valley and now form a large element of the population north of the true black zone, whilst the so-called Arabs of Kordofan and Darfur exhibit many Nubian and negroid characters.

(1) The *Hamites* or *Bejas* are a group of nomad tribes sometimes, but wrongly, included among the Arabs.

The principal Beja tribes in Sudan territory, where they mostly inhabit the Atbai desert and the Kassala region, are now the Bisharin, Hadendoa, and Kawahla. The Bisharin, who range the Atbai desert, are divided into the Um Ali in the north and Um Naji in the south. They are a wild people, primitive and hostile to progress. The Hadendoa are a large tribe with many divisions, lying south of the Berber-Suakin road, between the Atbara and the sea, and the Kawahla of the Blue Nile are semi-nomadic.

(2) The *Arabs* are the latest comers among the great races of the Sudan, the northern half of which they now dominate. In the Sudan, however, the name "Arab" by no means indicates a tribe of pure or even preponderatingly Arabian blood, as the immigrants have everywhere absorbed and Arabicized, rather than exterminated, the original populations. The Arabs are found chiefly between the eleventh and fifteenth parallels, especially in the Kordofan plains, the Gezira, the White and Blue Nile provinces, the country between the Atbara and Blue Nile, and Darfur.

The principal tribes are the Kababish, a large mixed tribe, one of the richest in the Sudan, found north of El Obeid, with a branch in Dongola province; and the Hamar, between El Nahud and El Odaiya, a large tribe at least 60,000 strong, of Darfur origin, with three divisions, partly nomadic but now largely sedentary, although making excellent fighting men. The chief Baggara tribes are the Hawazma, between El Obeid and Kadugli; the Messeria, east and south-east of El Odaiya; and the Homr—originally part of the Messeria

—with three divisions, south-west of the Nuba Mountains. All these are large and wealthy tribes, with many divisions and numerous flocks and herds. In the White Nile province and the Gezira the chief tribes are the Hassania—probably the largest in the district—inhabiting both river banks from Geteina to Kawa and extending into Berber; and the Gimma, of the Gedid district near Kosti, owning large herds of cattle, gum plantations, and arable land. In Darfur the Arab tribes form the most important section of the population.

(3) The *Nubas* were probably the chief aboriginal inhabitants of the northern and central Sudan, where, according to some authorities, they were once the ruling race and the creators of ancient Meroe. After the Arab invasion the majority of the Nile Nubas were absorbed into the conquering tribes, but isolated groups survive, chiefly on the Nile banks between the First and Fourth cataracts. These Nubas or Nubians (Barabra) are probably a quite distinct race from the Nubas proper, the inhabitants of the Nuba mountains.

(4) The *Negroid* type appears to be largely represented in Darfur and on the Upper Blue Nile, but our knowledge of these races is still imperfect. The so-called "black Arabs" of Darfur, such as the Zaghawa and Bedaiat in the north-east, are probably negroids, being the result of perpetual intermarriages of the Arab immigrants with the black races. In the present state of our knowledge, however, no definite conclusion can be drawn on this point.

(5) The *Negroes* of the Sudan, mostly found south of the twelfth parallel, consist of a bewildering number of distinct peoples, greatly varying in size, colour, character, and language. Only a few of the more important races can be described. They have been divided by Frobenius into three groups: the negroes of the swamps, those of the ironstone plateau, and the Nyam-Nyam of the Nile-Congo watershed. This classification, based on distinct ethnic characters, will be followed here.

(*a*) The swamp negroes form the main population of the Bahr el-Ghazal and Mongalla provinces. The most important are now the Shilluk, Dinka, Nuer, Beir, Jur, and Bari.

The *Shilluk* inhabit a thickly populated strip of fertile territory 12 to 20 miles wide, extending along the left bank of the White Nile from Lake No to Jebel Ahmed Agha, and along the right bank from the Sobat to Kodok. They are also found on both banks of the Sobat for 30 or 40 miles up stream. They are exceedingly brave, and the best fighters in the Sudan.

The *Dinka*, the largest and most important of the swamp tribes, forming several distinct groups in the Bahr el-Ghazal province, are in many ways a strong contrast to the Shilluk. They are generally savage, sullen, and treacherous, conservative and unenterprising to the last degree, lazy (only cultivating small crops for immediate use) and indifferent hunters. They are chiefly cattle breeders, and more prosperous than the Shilluk.

The *Nuer*, who are closely akin to the Dinka, are the most powerful and numerous tribe of the Sobat region Their territory extends along the lower Pibor, Sobat, and Baro rivers.

The *Beir*, a widely-spread tribe in the Sobat-Pibor district, are as yet unspoilt, and are one of the finest types in the Sudan, making excellent soldiers and scouts. They own large herds of cattle, and have little intercourse with their neighbours.

The *Jur*, living between Wau and Tonj, on the edge of the ironstone country, are said to be a branch of the Shilluk, but strongly resemble the Dinka, whom they serve. They are expert iron workers, and make the spearheads used by the swamp races.

The *Bari*, living on both banks of the Bahr el-Jebel, between Bar and Nimule, are a distinct race, with a language related to that of the Masai of Uganda. Under Dervish rule their prosperity was ruined and their spirit broken, and they are now poor and mentally degraded.

(*b*) The negroes of the ironstone region form a well-marked ethnic group, occupying the ferruginous lands between the swamps and the Nile-Congo water-parting. The most interesting and characteristic are the *Bongo*, whose country lies south of Wau. Another tribe of very similar habits and appearance is the *Golo*, who dwell west of Wau.

(*c*) The *Nyam-Nyam*, or *Zande*, live in the highlands of the Nile-Congo water-parting, between the fourth and sixth parallels, south and south-west of the ironstone negroes. Their estimated number is not less than 2 millions, and their territory, part of which lies within the Sudan and part in the Congo and Ubanghi, has an area of about 48,000 square miles. The Nyam-Nyam are a distinctive race of round-headed, chocolate-brown people, with long, thick, frizzled hair. They are by far the most intelligent and well organised of the black races, admirable hunters and fighters, and, when drilled, make excellent troops, alike in the Sudanese and the French Ubanghi armies. In former days they were notorious cannibals.

Language

North of Khartum, and over the greater part of Kordofan and Darfur, Arabic is generally spoken. The Barabra of Dongola province, however, speak four or five dialects of Nubian; and a group of closely related languages, of which eighteen distinct forms have been identified, are current among the Nuba of the Nuba mountains. The Beja tribes of the north-east speak a tongue known as Bedawiya, which has some affinities with Somali; and the black races of the Blue Nile, Darfur, and the south have each their own tongue The Shilluk language, which is akin to that of the Acholi of Uganda, is current far beyond the present limits of the tribe, and this fact supports the tradition that the Shilluk were once a great nation and dominated the country of the Bahr el-Jebel and Sobat. The Dinka tongue, which is related to Shilluk, is also un-

derstood by the Jur and other subject tribes. The Bari language belongs to the Masai group. The dialects of the swamp races are often extremely rudimentary, and seldom contain any abstract terms or high numerical symbols.

Among the ironstone negroes the principal tongues are Bongo and Mittu, dialects of the latter being spoken by a large group of tribes. The Nyam-Nyam speak a distinct language, more primitive than Bongo, having no tenses and few expressions for abstract ideas.

(6) Population

Distribution

The total population of the Sudan was estimated in 1917 at 3,400,000, although the number may be rather higher than this. There are in all about 45,000 foreigners, mostly Syrians, Egyptians, &c., of whom there are some 25,000; while there is also a considerable number of settlers from West Africa (about 15,000). These people first entered the country when on pilgrimage to Mecca, and have settled permanently in the Sudan.

The European element is very small, being in all under 4,000. A large proportion are Greeks and Italians engaged in trade. The British, outside the governing classes, are very few.

The most thickly inhabited regions are the valleys of the White and Blue Niles, between 10° and 16° 30′ north latitude. Khartum province has a density of 27 per square mile, that of Blue Nile 16, and that of White Nile 12. Next in order are the Bahr el-Ghazal and Upper Nile provinces with 9 to the square mile, and Nuba Mountains with 8. It is probable, however, that certain parts of the province of Bahr el-Ghazal—such as Bor, in the Dinka country—are among the most densely populated rural districts of the Sudan.

The crowded Shilluk country (Upper Nile), which is said by some authorities to be the most densely populated tract in the whole of Africa, has the appearance of a continuous village. The most sparsely inhabited regions are, of course, the northern deserts. Halfa province has only one inhabitant to 3 square miles, Dongola one to the square mile, Berber and Red Sea $1\frac{1}{4}$, and Kassala 2.

In the arid north the inhabitants tend to be either nomadic or assembled in towns on or near the Nile. In the moist and fertile south and on the upper courses of the Abyssinian tributaries they are scattered in villages, which form in the most favourable districts thickly clustered rural colonies.

Towns and Villages

Omdurman, the principal native city, which extends for six miles along the left bank of the Nile opposite the Blue Nile confluence, had in 1917 a population of 59,429. Its importance dates from the Dervish period, when, as the residence first of the Mahdi and then of the Khalifa, it grew from a straggling village to a vast collection of native huts. All the principal tribal chiefs have houses or agents there, and it is the headquarters of native trade. Khartum, the administrative capital, is built on the tongue of land formed by the junction of the Blue and White Niles, and has now a large modern quarter, Khartum North, on the right bank of the Blue Nile. The population of Khartum proper in 1917 was 23,083, and of Khartum North 15,973. Next in importance are Wad Medani, a flourishing town on the Blue Nile 147 miles above Khartum, with a population of about 15,000, chiefly Fung and Hameg blacks and Arabs; El Fasher, the capital of Darfur (reputed population 20,000), El Obeid, the capital of Kordofan (10,000), Suakin (10,000), El Nahud in Kordofan (7,500), Kosti (7–8,000), Kassala (6,000), and Berber town (5,000). In the south many of the village settlements shelter a considerable population.

Movement

No country in the world has suffered in recent times such great fluctuations of population as the Sudan. Before the Dervish period (1881) the inhabitants were reckoned at 8½ millions, but the immense wastage from warfare and disease under the rule of the Mahdi and Khalifa had so reduced them that in 1904 they numbered less than 2 millions. The population of the Bahr el-Ghazal province fell in this interval from 1½ millions to 400,000; that of Sennar from a million to 150,000; of Berber from 800,000 to 83,000; of Kassala from 500,000 to 74,000; of Khartum from 700,000 to 81,000; and of other districts in like proportion. Of the 800 villages which in 1883 existed on the banks of the Dinder and Rahad, in 1900 not one remained. Though the inhabitants are increasing steadily under British rule, and the rate will be greatly accelerated as the numerous children born since 1898 become of marriageable age, the country is still under-populated. The estimated numbers in 1917 had risen to 3½ millions, the most substantial increase being in the provinces of Bahr el-Ghazal (now 1,000,000), Upper Nile (from 150,000 to 300,000), Blue Nile (from 132,000 to 192,800), and Khartum (135,000).

The movement of the black races from south to north, which was formerly caused by the slave trade, is now modified, although continued to some extent by the demand for free labour.

II. POLITICAL HISTORY

Chronological Summary

730-667 B.C. Ethiopian dynasty in Egypt.
545 A.D. Christian kingdom of Nubia.
640 Arab conquest of Egypt.
Fourteenth century. The Dagus invaded by the Tungur Arabs.
1500 Final Arab conquest of Nubia.
1505 Amara Dunkas creates the Fung Kingdom.
1517 Sultan Selim takes Cairo. Egypt becomes a Turkish Pashalate.
1724-62 Ascendancy of the Fung Kingdom.
1748 Conquest of Kordofan by the Fungs.
1789 Downfall of the Fung Kingdom.
1798 Napoleon invades Egypt.
1801 British compel French to evacuate Egypt.
1806 Mehemet Ali Pasha of Egypt.
1820 Mehemet Ali annexes the Sudan.
1822 Foundation of Khartum.
1849 Death of Mehemet Ali.
1853 John Petherick's expedition.
1854-63 Reign of Khedive Said.
1858-72 Anti-slave trade edicts.
1863-79 Reign of Khedive Ismail.
1869-71 Baker Pasha Governor.
1872-75 Bogos and Harrar seized from Abyssinia.
1874-79 Gordon Governor.
1874 Zobeir annexes Darfur.
1875-76 Defeat of Ismail by Abyssinians.
1879 Accession of Tewfik.
1880-81 Rauf Pasha Governor.
1881 Rise of the Mahdi.
1883 Surrender of Egyptian garrisons in Kordofan.
Defeat of Hicks Pasha.
1884 Gordon reaches Khartum.
1885 Fall of Khartum. Recall of relief expedition.
Death of the Mahdi. Accession of the Khalifa Abdullah.
1886 Frontier withdrawn to Wadi Halfa.
1889 Defeats of Dervishes at Argin and Toski.
1891 Tokar recovered.
1894 Kassala taken by Italians.
1896-99 Reconquest of the Sudan.

1898 Frontier Convention with France.
Battles of the Atbara and Omdurman.
1899 Agreement between Great Britain and the Khedive.
Declaration modifying the Frontier Convention with France of 1898.
Death of the Khalifa.
Sir R. Wingate becomes Sirdar.
1900 Capture of Osman Digna.
1901-2 Agreements with Italy as to Eritrean frontier.
1902 Treaty with Ethiopia as to Abyssinian frontier.
Gordon College opened.
1904 The Lemaire mission.
1906 Agreement as to frontier with Belgian Congo.
1910 Creation of Governor-General's Council.
Lado Enclave surrendered to Sudan Government.
1914 Frontier with Uganda readjusted.
1916 Revolt of Ali Dinar. End of the Fur Sultans.
Darfur incorporated in the Sudan.
1919 Supplementary Convention to Anglo-French Convention of 1899.

I. History to 1899

(1) *Early History to* 1500

From the beginning the rulers of Egypt, successively Egyptian, Assyrian, Libyan, Persian, Greek, Roman, Arab, and Turkish, have regarded "Nubia" and "Ethiopia," the land south of the Second Cataract of the Nile, with both greed and anxiety. Only rarely, however, did they actually subdue any part of it; and once (B.C. 730-667) an "Ethiopian" dynasty in retaliation ruled the whole of Egypt.

The Romans of the Empire, as masters of Egypt, found two peoples inhabiting the Northern Sudan, the *Blemmyes* (ancestors of the Beja Hamite folk of to-day) and the *Nobatae* (represented to-day by the Barabra of Dongola district). To safeguard their own southern frontier against the former they enlisted the latter in their service. Eventually (545) a powerful Nubian kingdom, Christian in religion, with its capital at Old Dongola, was established. The Nubians, divided in the tenth century into the two

independent States of Makorra (capital Dongola) and Alwa (capital Soba, on the Blue Nile 14 miles south of Khartûm), preserved their Christianity and their independence, even against Arab pressure, for upwards of a thousand years. The Arab conquest of Egypt (640), flooding southwards, broke upon this barrier; and not until 1500 did the Arabs achieve the final conquest of Nubia, absorbing and proselytising the native inhabitants and banishing Christianity from the land.

Meanwhile the Blemmyes-Beja tribes, never Christianised, embraced Mohammedanism with fervour, and became largely intermixed with the Arab invaders from the north and from over the Red Sea. These also penetrated from the west and north-west into Darfur and Kordofan. For all these 5,000 years and more Ethiopia, the land of the negroes south of lat. 12° N., remained unknown to history.

(2) *Turks, Fungs, and Furs* (1500-1820)

In 1517 Selim, Sultan of Turkey, took Cairo, and soon conquered and ruled all the land south as far as the Third Cataract. South of this, two powerful native kingdoms practically divided the Sudan between them. The Fung Kingdom, a true negro power, created in 1505 by Amara Dunkas, ruled from the Third Cataract to Fazogli, from the White Nile to Suakin. Its capital was Sennar. In 1748 it conquered Kordofan; traces of this conquest remain to-day in the Nuba Mountains. It reached its highest pitch of power in the period 1724-62, and its fame spread as far as Constantinople. In 1789 the Fung Kingdom was destroyed by the rude tribe of the Hameg, and only miserable relics of it exist to-day in the Fungs of Jebel Gule, who preserve in part their pagan customs and speak their ancient tongue as well as Arabic. To the west lay the kingdom of the Furs, for long years rivals with the Fungs in the struggle for Kordofan. These Furs or Fors derived from the

aboriginal negroid Dagu people of Darfur, who were subject in the fourteenth century to invasion by the Tungur Arabs, a people of uncertain origin. Dâli, the first of the Fur Sultans, drew up a code of laws which lasted as long as the Sultanate. There was an unbroken succession of Sultans of Darfur for 400 years. In physical characteristics the original negro element predominated, but in religion the Arab. Religious fanaticism drove the last Sultan, Ali Dinar, to revolt against the Anglo-Egyptian Government in 1916, and with his defeat and death the Sultanate came to an end.

By the end of the eighteenth century, save for Darfur, the whole of the Sudan was in anarchy and confusion. The Turkish hold of the north was feeble, maintained precariously by Bosnian garrisons and Mameluke beys. The far south remained *terra incognita.*

(3) *Annexation by Egypt; Exploitation* (1820-81)

In 1820 the Sudan was annexed to Egypt by Mehemet Ali, who had "amputated" the latter country from the decaying body of the Ottoman Empire. In the Sudan he hoped to find gold, slaves, and recruits for his army in vast quantities. Only the gold failed him. For his own security also he needed to give employment to his turbulent army and to suppress the remnants of the Mamelukes who had taken refuge in the south. The work of annexation he entrusted to his youngest son, Ismail, who in 1822 was entrapped and burnt alive at Shendi. But the work went rapidly forward: Egyptian rule was extended south to Fazogli and west to the borders of Darfur; and in 1822 Khartum was founded as the centre of administration. The first twenty governors (1825-77) were Egyptian. By Mehemet Ali's death in 1849 Egyptian power reached up the Nile to Kodok (Fashoda), and eastwards included all the Beja country, Kassala, and the Taka Abyssinian border district. Traders in ivory (whose pioneer was the Englishman, John Petherick, in 1853)

and slave-raiders soon pushed beyond the limits of actual administration, and were able easily to frustrate the Khedive Said (1854-63), who wished to abandon the whole of the Sudan. He had to content himself with issuing the first proclamation of the abolition of slavery, which had no validity save on paper.

Henceforward, and especially from the year 1860, the negro peoples of the Nile Valley and of the Bahr el-Ghazal were the unceasing prey of the organized Arab slaving companies or "Khartumers," despite repeated Khedivial edicts against slavery (e.g., 1858, 1863, 1869, 1872). For twenty years in succession the Southern Sudan was devastated, and the inhabitants, through raids, slaughter, famine, and the horror of caravan marches, reached the lowest level of misery.[1] The appointment of European Governors of the Upper Nile or of Khartum, such as Baker (1869-71) and Gordon (1874-79), proved only a temporary hindrance to a traffic based on greed, stimulated by lust, sanctioned by religion and by custom, on the maintenance of which the whole agricultural welfare alike of the Sudan and of Egypt seemed inevitably to depend.

The megalomania and extravagance of the Khedive Ismail (1863-79) extended the frontiers of the Egyptian Sudan in all directions. On the south, Sir Samuel Baker reached the borders of Unyoro; but his successor, Charles George Gordon, found it necessary to withdraw the most southerly Egyptian garrisons from the Bari country. Darfur was annexed in 1874 by Zobeir, the semi-independent prince of Arab slave traders, in Ismail's name. Zobeir's son, Suleiman, revolted (on his father's detention at Cairo) in the Bahr el-Ghazal Province, but the rebellion was suppressed and Suleiman himself slain by Gordon's lieutenant, Romolo Gessi, and Egyptian rule came within sight of the Nile-Congo divide. Another

[1] The testimony of all the European observers, Gordon, Baker, Junker, Schweinfurth, Gessi, Slatin, &c., is unanimous. The figures of the loss of life and slave captures none the less almost exceed belief.

of Gordon's lieutenants, the German doctor Emin, governed the Equatorial Province up to Lake Albert, and the Austrian soldier Slatin was appointed to Kordofan. On the east Ismail's possessions, won largely by purchase and diplomacy, included Suakin, Massawa, and the coastal region southward to beyond Berbera. Bogos and Harrar were wrenched from Abyssinia in 1872-5; but King John of Abyssinia inflicted severe defeats on Ismail's worthless troops at Gudda-Guddi in 1875 and Gura in 1876; and these districts were ceded back to Abyssinia a few years later in return for Abyssinian help against the Dervishes. When Ismail was deposed in 1879, his vast Sudanese possessions were in a state of indescribable misery and bankruptcy, and the whole of the Egyptian administration of the land was rotten to the core.[1] At the root of the whole evil was the slave trade, which would revive to-morrow if the English share in the administration of the Sudan was surrendered and if the French lost control of Wadai.

The accession of Tewfik (June 1879) soon caused the resignation of Gordon, who left the Sudan in December 1879. In the following year Gessi also resigned. The old order of things returned unchecked and even stimulated by Rauf Pasha at Khartum (Governor 1880-81). Gordon's withdrawal destroyed the last hope of peace and reform in the Sudan.

(4) *The Mahdia and the Reconquest* (1881-99)

In August 1881 Mohammed Ahmed, an ascetic *fiki* of the despised Berberine race of Dongola district, aged about 40, a man inspired by genuine religious enthusiasm and faith in his own divine call for the purification of Islam, a seer of visions, yet of the shrewdest intelligence, proclaimed a holy war against all infidels, "Turks," and the Egyptian oppressors of the country. He appropriated the traditional

[1] The evidence of Lord Cromer and of Gordon's reports and diaries is decisive.

Sunni title and personality of the Mahdi; and his superb oratory, early military successes, and personal attractiveness rallied the greater part of the population of the Northern Sudan to him. His chief supporters were the fierce Baggara cattle-owning tribes of the western deserts, who were alarmed by the efforts, however feeble and in part insincere, which the Government was making to abolish slavery. For the slave trade was " at once their religion, their occupation, and their principal source of income." Religious zeal was, however, the chief cause and also the binding-force of the rising. Hatred of the Egyptian tax-gatherer, official, and oppressor had spread universal discontent through the country and brought all the wretched to the Mahdi's banner. The worthlessness of the Egyptian army of occupation, men and officers alike, gave the movement an unexampled opportunity of success.

Eluding capture by a timely "Hegira" to Jebel Gedir in the Nuba mountains, the Mahdi slew two governors of Fashoda and destroyed their armies, captured after long sieges the Egyptian garrisons in Kordofan (January 1883), and annihilated the avenging army of 10,000 men under Hicks Pasha at Shekan, a few miles south-east of El Obeid, on November 5, 1883. This caused the surrender of Slatin in Darfur next month. In the eastern Sudan the Egyptian garrisons were beleaguered, and Suakin was on the point of capture.

The Government decided to evacuate the whole Sudan, and despatched Gordon to withdraw the garrison and provide a working Government instead. This combination of tasks and the vacillation of the British Government proved fatal. Gordon arrived in Khartum on February 8, 1884, unsupported, and was soon invested. A British rescue expedition was sent six months too late, and lingered, perhaps unduly, on its march. Khartum fell to the Dervishes on January 26, 1885. Gordon was killed, and the town was shortly afterwards partially destroyed, its surviving inhabi-

tants being removed to the Dervish capital, Omdurman. The British expedition was recalled in June 1885. Sennar surrendered on July 30, and on the same day Kassala was captured. Some of the garrisons in the eastern Sudan were rescued by the Abyssinians; King John, by the treaty of Adowa (June 3, 1884), receiving back Ismail's acquisitions as the price of his aid. The whole of the eastern Sudan, save Suakin, was practically abandoned. A Dervish advance to the north was checked at Ginnis on December 30, 1885; but this was defensive strategy only. By April 1886 the frontier of Egypt was withdrawn to Wadi Halfa.

Meanwhile the Mahdi, who in four years had made himself undisputed ruler of two million square miles of territory, died at Omdurman on June 22, 1885. The Khalifa Abdulla, of the Taaisha section of Baggara, who had been his chief general, seized the power, and with some difficulty maintained his position in the face of constant rebellion at home and exhausting war with the Abyssinians on the frontier. Not until 1889 was he free to resume the plan of the invasion of Egypt. Eleven thousand Dervishes, under his Emir, Wad-el-Nejumi, were, however, defeated at Argin, a few miles beyond Wadi Halfa, on July 2, 1889, and destroyed at Toski by Sir Francis Grenfell on August 3, in a battle which proved the sterling merit of the new Egyptian model army, for years carefully trained by and under the leadership of British officers. The Khalifa was henceforth reduced to the defensive. He lost Tokar to the Egyptian army on February 8, 1891, and Kassala to the Italians on July 17, 1894. In the far south his Emirs' efforts to conquer the Upper Nile and Bahr el-Ghazal had never met with complete success, Emin always lurking quietly out of their reach. Darfur was always restless; and the Nuba mountaineers remained defiant.

Yet the Khalifa, a man of great political sagacity and force of character, kept his Dervishes loyal to him, played successfully on their religious fanaticism (a

difficult task now that the Mahdi was dead), and was always dangerous. Under his rule the country suffered greatly from battle, oppression, disease, and famine. The population was said to have been reduced from eight and a half millions to two millions; whole tracts were deserted and went out of cultivation; towns were destroyed; tribes which opposed the Khalifa (such as the Jaalin, Shukria, and Kababish) became practically extinct. Omdurman itself, it is true, grew into a conglomeration of 150,000 souls, swarming in squalid pestilential mud hovels. The loyalty of the Baggara, an efficient spy system, and the terror of the Khalifa's system of government triumphed over all the misery and discontent of the population.

The Abyssinian defeat of the Italians at Adowa on March 1, 1896, and the fear lest this should incite the Dervishes to attack Kassala, at once determined the British Government to reconquer the Sudan. An advance on Dongola would divert their attention. But there were other and deeper motives, three in number, viz.: (1) policy—the security of Egypt and safeguarding of her water supply; (2) philanthropy—the redemption of the Sudanese from misery and the final destruction of the slave trade; (3) sentiment—English *amour propre* and the popular indignation at the fate of Gordon. All three co-operated strongly to move the Government, and the Sirdar, Sir Herbert Kitchener, was ordered to take the field.

The great offensive was accomplished with thoroughness and methodical precision. The first brush with the enemy occurred at Firket on June 7, 1896. On September 23 Dongola was reoccupied, and Merowe (Merawi) became army headquarters for the next few months. In the following year Abu Hamed was captured on August 7, and Berber occupied on August 31. The railway was built to Abu Hamed, the Suakin-Berber road was reopened, and Kassala was taken over once more by Egypt on Christmas Day.

In the spring of 1898 the army marched south from Berber. On April 8 the Dervish army of 12,000 men,

under Mahmud, was attacked and routed in its position on the Atbara. On September 2 the Khalifa himself and his main army of 40-50,000 men fell upon the Anglo-Egyptian army of 22,000 men, under the Kerreri hills, a few miles north-west of Omdurman. The Khalifa lost 27,000 men killed and wounded, and the survivors fled to the desert. He himself escaped, to be finally caught and slain in battle at Um Debreikat on November 24, 1899. Before this, the Sirdar had hastened south to meet the French expedition under Marchand at Fashoda (Kodok) on September 19, 1898; and the Anglo-Egyptian claim to the whole valley of the Upper Nile was presently recognized by the French Government, Marchand leaving Fashoda and making his way to the French Somali coast. Sennar, Karkoj, Roseires, Gallabat, and Fazogli were retaken, and El Obeid was occupied on December 17, 1899. The Sultanate of Darfur was re-established, and Ali Dinar, one of the Khalifa's prisoners at Omdurman, was restored to the throne of his ancestors as client prince. Osman Digna, the vigorous and elusive leader of the Dervish forces in the eastern Sudan, was captured on January 18, 1900. On December 22, 1899, Sir Reginald Wingate succeeded Kitchener as Sirdar and Governor-General of the Sudan, a post which he retained for seventeen years. The whole work of the regeneration of the Sudan has taken place under his auspices. The total cost in money of the reconquest of the Sudan (1896-99) was £E. 2,412,000, of which the British Government contributed some £E. 780,000. But the country was found devastated, depopulated, and ruined. The harder task of reconstruction remained

II. The Regeneration of the Sudan, 1899-1917

(1) *The System of Government*

The first task after the reconquest was to establish the political status of the Sudan and to make provision for its government. The shadowy claims of Turkey could in justice and in safety be completely dis

regarded. Simply to hand the country back to Egypt was, in view of the past and of the share taken by Great Britain in the reoccupation, impossible. A condominium of Great Britain and Egypt in the Sudan was created by an agreement between the British Government and that of the Khedive, signed at Cairo on January 19, 1899, the terms of which were extended to the town of Suakin by a subsequent Agreement of July 10, 1899. The nature and provisions of this Agreement freed the Sudan from any possibility of interference by any Power other than the two concerned. The Sultan of Turkey raised a feeble and ineffective protest; but no formal assent to it of any Power was requested. The share of the British Government in this system of administration was, in the Preamble to the Agreement, based definitely on the "right of conquest." Its only later modification was the creation in January 1910 of the Governor-General's Council. Under the terms of this Constitution the Sudan has been administered for the last nineteen years.

During this period no enactments concerning the Sudan have been passed by the British Parliament. The somewhat anomalous system of Government has worked admirably. Its semi-military character was and is inevitable, but the civilian element in it constantly tends to increase.

(2) *Frontier History*

The frontiers of the Sudan, as fixed by the Agreement of January 19, 1899, and by subsequent arrangements, are coterminous with Egyptian, Belgian, French, Italian, and Abyssinian territory, and with the Uganda Protectorate. The history of the last five frontiers and of the relations of the Sudan Government with the semi-independent Sultan of Darfur may be briefly summarised.

(*a*) *The Belgian Enclave Frontier.*—The Lado Enclave was a large tract of country, with a popula-

tion of some 50,000, bounded on the east by the Nile and Lake Albert; on the north by a straight line running due east from the old Belgian Nile station of Kiro (approx. 5° 50′ N.) to longitude 30° E.; and on the west by longitude 30° E. till it reaches the Nile-Congo watershed; then along the water-parting to a point two-thirds of the way down the western shore of Lake Albert. This was assigned to the Congo Free State by an agreement, signed at London on May 9, 1906, which itself cancelled the Brussels Agreement of May 12, 1894. This earlier agreement had surrendered to King Leopold all the country south of 10° N. latitude and east of 35° E. longitude at a time when the Upper Nile valley was either in Dervish possession or No Man's Land, and the Belgian effective occupation was limited to a few posts on the river near Wadelai.[1]

The Agreement of 1906 contracted and defined the boundaries of Belgian territory on and west of the Bahr el-Jebel. But by the Agreement the Lado Enclave, as it was called, reverted to the Sudan on the death of King Leopold; and it was in consequence formally surrendered to the Sudan Government without any friction on June 16, 1910. By a proclamation of August 4, 1910, the former Lado Enclave became part of Mongalla province. The subsequent frontier arrangement with Uganda transferred the southern portion of it to the latter Protectorate.

The Belgian Congo Frontier.—In 1904 the Belgian Lemaire Mission, coming from the Congo Free State, established five fortified posts on the Sudanese side of the Nile-Congo divide in Bahr el-Ghazal province; and King Leopold showed so obvious a disposition to annex the district thus temporarily occupied that a somewhat acute political tension resulted. This was ended by the Agreement of May 9, 1906, which fixed the Nile-Congo divide as the frontier as far as the

[1] Chaltin's Congo column occupied Rejaf in 1897.

French frontier to the north, viz., the source of the Mbomu river.[1] By 1907 all Congolese troops had withdrawn to their side of this frontier. In 1908 the Congo Free State became a colony of Belgium, since which time relations between the Sudan and the Belgian officials have always been cordial. A joint boundary Commission for the delimitation of the frontier was arranged for the end of 1914, but its work was postponed by the outbreak of the European War. By the Agreement of May 1906 the so-called "Mahagi" strip of land, giving access from the west to Lake Albert, was leased to the Belgian Congo, and this strip was actually delimited in 1913. Since the readjustment of the Sudan-Uganda frontier of 1914 this now concerns Uganda only.

Apart from some recent disturbances with native chiefs where the three frontiers—Belgian, French, and Sudanese—meet, to suppress which the officials of the three countries co-operated heartily and successfully, nothing has happened to disturb the peace of this frontier. The ever-threatening peril of sleeping-sickness (bequeathed first to the Sudan with the Lado Enclave, and a serious menace on the Yei river) calls for similar co-operation in the enforcement of such quarantine and other precautions as may be possible.

(*b*) *The French Ubanghi Frontier.*—This frontier between the Sudan and French spheres of influence, was defined by a declaration, signed at London on March 21, 1899 (completing the "Convention between Great Britain and France" of June 14, 1898), and by a supplementary convention signed on September 8, 1919 (*cf.* above, p. 4). By this the frontier line was drawn northwards from the source of the Mbomu river along the Nile-Congo divide for some 450 miles; next it separated Darfur on the east from Wadai on the west, and then ran north-west up to the frontier of Tripoli. In 1899 the French had

[1] Fixed by the Agreement of August 14, 1894, between France and the Congo Free State.

hardly penetrated east of Lake Chad, and it was not until their effective occupation of Wadai and its capital Abesher (Abechr) in 1909 that direct relations were established by the border officials of the two countries. In 1910 these met to concert measures against the slave trade, of which Wadai was the last and flourishing refuge, and by a system of passes to restrict the travelling companies of merchants and pilgrims to their professed and legitimate employments. In 1912 the question, difficult here as on the Eritrean frontier, of the conditions under which native chiefs and their adherents should be allowed to migrate over the frontier was subject to similar discussion, and the working principle of disarmament and removal some distance inland (unless in the case of fugitives from justice) was adopted.

The actual delimitation of the frontier and the project for a railway to link the Bahr el-Ghazal and Upper Ubanghi had hardly come under consideration when they were stopped by the outbreak of the European War. In 1916 a rebellious chief, Mopoi, gave trouble to French, Belgian, and Sudanese authorities alike. German intrigue, as also Pan-African propaganda, were suspected but not proved. Joint action by the officials on the spot suppressed the rising, which had caused the French some loss. In 1917 an old elephant-poacher, Krikri, had also to be dealt with on the frontier. The French have been during the last few years most active in keeping robber frontier tribes such as the Gura'an in check. The relations between the officials of the two countries have been most friendly, and it is recognized that their interests are identical.

(*c*) *Darfur*.—Darfur, which for eighteen years (1899-1916) constituted a dependent state lying between Sudan territory and French Equatorial Africa, is a land rectangular in shape, measuring approximately 153,300 square miles, some 450 miles from north to south, and 350 from east to west. On the north it borders the Libyan desert and Dongola

province; on the east Kordofan; on the south the Bahr el-Ghazal province; on the west Wadai. The original Fur inhabitants are mostly found in the west round the Marra mountains; the Arab element predominates elsewhere. It is a turbulent land of many feuds, with wild, lawless tribes, the Bedaiat and Gura'an, on the frontiers, who throughout this period have unceasingly harried their Kordofan neighbours (particularly the Kababish and Hawawir). Others of its tribes have from time to time attempted to migrate *en masse* into Sudanese territory to secure better treatment, as did the Maalia and Zeiadia in 1904. The "Arbain" (Forty Days) road through the desert by Bir Natrun to Upper Egypt at Assiut has been the constant scene of depredation by raiders from Darfur; and the Sudan Government's efforts from 1905 to 1908 to keep this trade route open (from 1884 to 1905 it was always unsafe) were not very successful.

The land was until 1916 ruled by Ali Dinar, a youthful grandson of Sultan Mohammed Fadl (who reigned 1801-1839), who was recognised as Sultan at the end of 1899. He paid regularly since 1901 a small annual tribute of £E. 500 to Khartum, and received occasional advice and instructions. For the most part he was left to go his own way, and during his reign his will was sole law in the country. He gradually accumulated a large store of arms, including 6,000 rifles, and gathered half the entire wealth of the country into his own possession. His religious zeal was fervent; his harem large. From time to time tribes and sheikhs defied him; but he suppressed them with more or less success.

Musa Madibbo, however, sheikh of the Rizeigat Arabs in the south of Darfur, always maintained his independence, and harboured refugees who fled to escape Ali Dinar's extortions. Ultimately (1915-16) this sheikh proved useful to the Sudan Government. The French, soon after their occupation of Wadai, became involved in disputes with the Sultan concerning the border districts of Dar Tama and Dar Masalit,

and the Sudan Government intervened in the matter.

The French proposals in 1913 were unacceptable, but the question was on the high road to settlement by arbitration at The Hague when the outbreak of the European War interrupted the negotiations. Ali Dinar, corrupted by letters from Enver Pasha in February 1915, by a Turkish decoration in August 1915, and by gifts of arms from the Senussi in March 1916, renounced his allegiance and prepared to invade Kordofan and Upper Egypt in co-operation with the Senussi invasion of Egypt from Sollum and Siwa.

In March 1916 a punitive expedition was sent against him, which marched from El Nahud in Kordofan on the Sultan's capital, El Fasher. The Darfur army of 3,500 men was routed at Beringa, and the capital was occupied on May 23. The Sultan fled to Jebel Marra. In September the advance was resumed, and finally Ali Dinar was surprised and killed in his camp at Giuba, 30 miles south-west of Kulme, on November 6, 1916. His last adherents surrendered on November 23. Darfur was then incorporated into the Sudan. Co-operation with a French column against the lawless frontier tribes in December 1916 speedily followed. A new military post and wireless station on the western frontier at Kereinik were established in 1918 to protect the Wadai-Darfur trade routes. The country is still largely unexplored and unmapped.

(*d*) *The Eritrean Frontier.*—A long series of agreements and other documents has defined the Sudan-Eritrean frontier from Ras Kasar on the Red Sea coast to Umbrega on the Setit river. The work of survey and delimitation is now all but complete. A commission of December 1915–January 1916 surveyed the section farthest south. There were also concluded between the two countries a Customs Convention (November 26, 1901), a Postal Convention (January 8, 1902), and a Telegraph Convention (January 8, 1902).

Neither on the Eritrean nor on the Abyssinian

border does the political coincide with the ethnical frontier. The large nomad tribe of the Beni Amer on the former, that of the Anuak on the latter, are divided between the Sudan and its neighbour. In both cases this has led to difficulties. On the Eritrean frontier the nomad, of sheer necessity, desires to move his flocks and herds from pasturage to pasturage, according to the various seasons of the year, and thus to come down every autumn from the Eritrean hills to the Kassala and Atbara plains. The problem has been further complicated by the constant recurrence of cattle disease in Eritrea. Full liberty of action to permit or prohibit such migration was reserved by both Governments in the Sabderat Agreement of February 28, 1901, which superseded earlier arrangements of 1895 and 1898. At present such migrations are discouraged. Both in this matter and in that of the utilisation of the waters of the Gash for storage and irrigation purposes (one of great importance to Kassala) the goodwill of the Italian authorities and border officers has never been lacking. Relations with Eritrea throughout the period have been most friendly, and, save for spasmodic acts of brigandage, the peace of the frontier has been undisturbed. The chief need is the building of the railway from Thamiam on the Red Sea line to Kassala town (see p. 83).

(*e*) *The Abyssinian Frontier.*—A treaty with Ethiopia of May 15, 1902, defined the frontier between Abyssinia and the Sudan, and gave the latter certain trade facilities and railway concessions. Of the last no use has been made. For trade purposes a block of territory was leased to the Sudan at Itang on the Baro (see Appendix III) for which in 1904 the present commercial station at Gambela was substituted. Hence a road runs to Addis Abbaba, and here, too, is the only wireless station in Abyssinia. More than three-quarters of the total Sudan trade with Abyssinia passes through Gambela.

To the Sudan, as to Egypt, the water contributed to the Nile by the rivers rising in Abyssinia, the Blue

Nile, the Sobat, and their tributaries, is of vital importance, as the amount exceeds that supplied from any other source. The same treaty therefore forbade the construction of any work across the Blue Nile, the Sobat, or Lake Tsana which might arrest the flow of their waters into the Nile, except by agreement with the Governments of Great Britain and the Sudan. This clause has been duly observed, and no such work attempted. The idea of a regulating barrage at the lake led to the despatch in 1915 of a joint mission of enquiry by agreement with the Abyssinian Government; but circumstances prevented any great result from this mission, which returned to the Sudan early in 1916.

The actual frontier from the Setit on the north to lat. 6° N. on the south has been (1903 and 1909) partially surveyed, but the section from the Sobat to Lake Rudolf is still provisional and not fully explored. Except where it follows the course of a river, it cannot be said to be in any case delimited. Slave-raiding, slave-smuggling, arms-smuggling, ivory-poaching, have all contributed since 1899, and especially since the retirement of the Emperor Menelik (1910), to keep this frontier in a most disturbed condition. The tribes of the south-eastern Sudan (especially the Nuer, Beir, Berti, and Burun) have suffered constant raids by the Galla, Anuak, and other Abyssinian highlanders.

To check the evil the Sudan has been thrown of late years entirely on its own resources. The Jebel Jerok punitive expedition of 1904 had some Abyssinian help in suppressing the slave-raiders under Ibrahim Wad Mahmud. From 1907 to 1912 raids from over the frontier, as on Gezan, Jebel Kashangaru, and Jebel Faronge, were of annual occurrence. Vigilance patrols have constantly to intercept the *jellabas*, or merchants, who smuggle slaves over the border into the Sudan. Since 1911 the smuggling of arms and ammunition has been a still greater evil, affecting Uganda as well as the Sudan. The Anuak are said to have acquired 25,000 rifles in this year, and the Sudanese

tribes from the border as far as the Bahr el-Jebel have learnt to purchase rifles from Abyssinian merchants by illicit trade in ivory.

These pugnacious and little-known tribes of the south-eastern Sudan and of the Uganda border have thus been able to indulge in their favourite pursuits of inter-tribal feuds with greatly increased ferocity. From 1912 to 1917 there has been constant fighting among the Anuak (part of this tribe belongs to the Sudan), Nuer, Beir, Burun, and Dinka peoples, and a succession of punitive patrols has had to be despatched. Over a large part of the south-eastern Sudan security of life and the maintenance of order have been uninterruptedly menaced. So great was the burden on Mongalla province that a new Sobat-Pibor military district was carved out of it in 1912, with an area of 24,400 square miles, and a complete battalion was assigned to it. Military posts were fortified at Nasser, Akobo, Bonjak, Pibor, and, in 1917, at Nyerol. Others are urgently needed on the Boma plateau and in the Garjak Nuer district. The land beyond the border remains a sanctuary for marauders, and the strengthening of the military resources of the frontier districts cannot prevent this. The creation of a strong, friendly, and sympathetic Central Government in Abyssinia is the chief need of the immediate future, and the best hope for the restoration and maintenance of order on this, the only one of the Sudan frontiers which is to-day, as it has always been, in a thoroughly unsatisfactory condition.

(*f*) *The Uganda Frontier.*—Down to December 31, 1913, the fifth parallel of north latitude was the frontier between the Sudan and Uganda,[1] Mongalla on the Bahr el-Jebel being the southernmost place belonging to the former, Gondokoro the most northerly belonging to the latter.

When in 1910 the Sudan acquired the Lado Enclave,[2]

[1] As it still appears (erroneously) on most published maps, including the 1918 reprint of the War Office Map of Abyssinia (1908).

[2] See above, p. 33.

the left bank of the Nile for some 200 miles belonged to it, the right bank to Uganda. As a result of a joint commission in 1913 the whole frontier was readjusted by a large exchange of territory, the Sudan giving up 4,700 square miles and receiving 17,000 (much of which was unexplored and marshland). On the river, Dufile was fixed on as the northernmost Uganda station, Nimule as the most southerly Sudan post. From Nimule the frontier runs eastward to Lake Rudolf, westward to the Nile-Congo divide and the Belgian frontier. Most of it has not yet been surveyed, and the whole is at present provisional only. By this exchange, the Madi, Lugwari, and Alur tribes belong to Uganda, the Bari (hitherto divided), Toposa, and Latuka tribes to the Sudan.

Exploration and, lagging behind it, administration have since January 1, 1914, been gradually pushed eastwards from the river to the Lafit, Lokoia, Imatong, and Dongatolo hills (1914-16). Sultan Lokidi, of the Latuka people, offered opposition at Tarangole, and was killed in battle in June 1917. The tribes to the east of this place are still little known. On the outbreak of the European War the tribes on the Sudan side of the new frontier raided over the border, and at the request of the Uganda Government Sudan troops from Mongalla temporarily patrolled the northern strip of Uganda territory. The Sudan also sent a contingent to the Turkana expedition on the west of Lake Rudolf in 1915. Uganda has now resumed the administration of her own northern territory. Much fighting took place in 1917 with the Turkana on the frontier north of the Laburr mountains, these being assisted by Abyssinian riflemen raiding from the Kibish river. Further military operations against the Turkana, in co-operation with forces from the British East Africa Protectorate, were necessary, December 1917–June 1918. The frontier in the extreme south-east of the Sudan is disturbed, hostile natives finding here, as farther north, ready refuge over the Abyssinian frontier.

(3) *Internal History; Religious Fanaticism; Slavery*

Neither the death of the Mahdi nor the overthrow of the Khalifa completely destroyed the belief in the former's divine mission prevalent in the northern Sudan. From 1899 the recrudescence of fanaticism has always been a possible peril. To it the Arabs of the Gezira and the Baggara of Kordofan were always liable. To the former was due the one really dangerous outbreak of these years, the rising in 1908 at Katfia. The Baggara were found still paying surreptitious visits to the Khalifa's grave in 1915 (a fact which completely justifies the destruction of the Mahdi's tomb at Omdurman in 1898). In the years 1901-16 a dozen or more religious fanatics, secretly or openly hostile, have excited attention. The career of the original Mahdi emphasised the importance of the "*obsta principiis*" maxim, which has throughout determined the action taken in these cases by the Sudan Government. Thanks to this, only the 1908 outbreak caused disturbance of any long duration or involved the loss of English life. The summary list of these fanatics is as follows:—

In February 1901 Ali Abdul Kerim in Khartum province claimed to be the Mahdi. He was arrested and imprisoned. In the autumn of 1902 Mohammed el-Amin, from Bornu, declared himself the Mahdi in Kordofan on his return journey from Mecca. He was captured at Dar Gimma and executed at El Obeid. In 1904 Mohammed Adam declared himself the prophet Isa (i.e., Jesus[1]) at Singa in Sennar province. He was killed in a skirmish. In April 1908 Abdul Kader, an old pardoned Mahdist, rebelled in the Mesellemia district of Blue Nile province, preached a holy war, murdered an English officer[2] at Tugr

[1] In the tenets of all Moslem sects there is a close connection between Jesus and the Mahdi in relation to the Second Advent. This belief in various shapes is based on "the Traditions," not on the Koran.

[2] Mr C. C. Scott-Moncrieff.

village, and attacked a punitive force at Katfia. In May he was captured, tried, and hanged. The unrest spread to the White Nile province, and took many months to die away. Abdul Bagi, one of his adherents, escaped arrest until April 1914, when, after stout resistance, he was taken and died of wounds soon after.

In 1908 Abu Howara, a *fiki*, proclaimed the immediate advent of Jesus at Burdia in Kordofan. The Governor appeared instead, and the *fiki* was both arrested and discredited. In the same year Abdel Wahab and other Mahdist *fikis* in Dongola province were detected in plots against the Government. In 1910 Hashmi, who declared himself the Sahib el-Wakt ("Master of the Times") and his sons gave trouble at Kitiab village, in Berber province. He was arrested and hanged for murder. In 1910 a *fiki* among the Shenabla in White Nile province claimed to be the prophet Isa. He was killed in an affray with the local police. In 1910 a Mahdi arrested at Abba Island in the same province proved to be a deserter from the 9th Sudanese battalion. In 1900 Nigma el-Din, a *fiki*, used the excitement caused by Halley's Comet, the "Mahdi's Star," to cause a disturbance at two villages of Taaisha (the Khalifa's old tribe) in Sennar province. He eluded arrest and caused fresh trouble in three Fellata villages south of Sennar next year. He again escaped, and thus justified his claim to invisibility.

In 1912 Akasha Ahmed, a *fiki*, one of Abdul Kader's old adherents in 1908, claimed to be the prophet Isa at Jebel Gedir in the Nuba mountains (the scene of the Mahdi's "Hegira" in 1881). He was killed in fighting. In 1915 Ahmed Omar, a Fellata from Sokoto, also declared himself the prophet Isa at Jebel Gedir, and called on the Fellata villagers of the district to join him. They remained quiet, and he and his small band of followers were slain in attacking the local police. In January 1916 a youth in Halfa province declared himself the destined ruler of the world and attracted adherents. He was suppressed. The

number of these fanatics, petty as many of their risings seem, justifies the unsleeping vigilance of the Government and the prompt action taken in every case by the local authorities.

Throughout these years (1899-1917) the Government and officials have been untiring in their efforts to destroy the remnants of the slave trade on the Abyssinian and western frontiers, to intercept slave caravans, to detect and punish the kidnapping of women and children, and to promote the gradual disappearance of domestic slavery. As a result, though sporadic kidnapping continues, the slave trade otherwise is stamped out, and domestic slavery is dying.

(4) *Provincial History*

The Sudan on its reoccupation was divided into ten provinces and districts,[1] viz., Halfa, Dongola, Khartum, Berber, Kassala, Suakin (called Red Sea province from 1906), Kordofan, Fashoda (called Upper Nile province from 1903), Sennar, and Bahr el-Ghazal. Later readjustments added four, viz., Blue Nile (formed out of Khartum province in June 1902, and named Gezira province till January 1, 1905); White Nile (formed January 1, 1905, of districts taken from Blue Nile and Kordofan); Mongalla (created in 1906, consisting of the southern portion of Upper Nile); Nuba Mountains (the southern portion of Kordofan, separated from this for administrative purposes as from January 1, 1913, and for financial purposes from January 1, 1914). Darfur was annexed in 1916. The military district of Sobat-Pibor was separated as such from Mongalla in 1912. The total number of provinces is now fifteen, besides this one military district.[2] Various readjustments of provincial boundaries and some changes in the assignation of tribes to one or other have also been made from time to time; some tribes are distributed over two or more provinces.

[1] This early distinction is immaterial.

[2] For details of organization, &c., see below, p. 59.

The actual delimitation of provincial boundaries has been steadily in progress, but is not yet in all cases completed. Irrigation and labour have throughout the period been the chief problems of the northern provinces, communications and transport of the southern. The process of pacification and economic development has been pursued with success from the beginning.

The chief historical events may be briefly summarised under the various provinces. These differ so widely in size, condition, and inhabitants (the Sudan being one great "*conluvies nationum*") that a more generalized treatment of their history is hardly possible.

Halfa.—Locusts, rainstorms, and a low Nile (as especially in 1913) have at times occasioned distress, but the province has on the whole been prosperous and has always paid its way. The closing of the old military railway from Halfa to Kerma in 1905 increased the scantiness of communications; but this involved no such disastrous consequences as were feared. In 1903 the backward Sukkot and Mahas districts of Dongola province were transferred to Halfa. Wadi Halfa, the capital, has become a flourishing cosmopolitan town.

Dongola.—Capital: Dongola from 1899 to 1903, Merowe (Merawi) from 1903. In 1902 the kidnapping of women and children by the Bisharin and Jaalin for sale as slaves in Jedda market caused unrest. The tribes of the far western deserts and the Arbain road have been constantly harried by Bedaiat raids from Darfur. The Hawawir tribe has given trouble and refused to pay tribute, but in 1917 was assigned to Kordofan; otherwise the province has always been rich, prosperous, and contented. The system of basin irrigation established here in 1909 has averted most of the evils caused by a low Nile (as in 1913). Schools are popular, malaria is decreasing, and progress is deliberate and assured.

Khartum.—The population of the three towns, Khartum, Omdurman, and Khartum North (called

Halfaya down to 1903), has risen from 69,000 in 1903 to 98,485 in 1917; that of Khartum itself from 8,000 to 23,000. Gordon College was opened by the Sirdar on November 8, 1902. Khartum Cathedral was consecrated by the Bishop of London on January 26, 1912, the 27th anniversary of Gordon's death. Locusts at times ravage the gardens, but successful war is waged on the mosquito. Dust remains "a necessary constituent of the atmosphere."

Berber.—This province's receipts exceeded its expenditure as early as 1902. The gold mines at Um Nabardi and archæological activity at Meroe afford useful employment, especially in bad years (as 1914), to the inhabitants, who are mostly small cultivators and hard-working. The Zeidab experimental plantation and an irrigation basin at Kelli (opened in 1914) are of present use and future promise. The Jaalin are recovering slowly from their massacre by the Dervish Mahmud in 1897. Only one petty outbreak of fanaticism, that of Hashmi in 1910, has occurred. For the roving tribes of the Atbai blood feuds and raids are still among the diversions of life.

Blue Nile.—Created in 1902, and called Blue Nile from January 1, 1905; capital, 1902-1905, Kamlin; from 1905, Wad Medani. This province has been the chief home of Mahdist fanaticism in the Sudan; the Katfia outbreak of 1908 caused two years' unrest. The experimental farm at Tayiba was opened in 1911. Great irrigation projects in the Gezira are now approved, but were delayed by the European War. There have been many boundary disputes and adjustments with White Nile, Sennar, and Kassala.

White Nile.—Created in 1905. This province is financially most prosperous, and has always paid its way, its surplus rising from £E.4,593 in 1905 to £E.30,783 in 1912. Dura is exported to Egypt in good years (as 1909), imported from India in bad (as 1913). The Arab camelmen, "almost naked themselves," purchase jewellery in large quantities for their women. There has been much immigration into the province of

Fellata, Fur, Taaisha, and others. Public security has been good, crime rare, and service in the police correspondingly popular.

Sennar.—Capital from 1905, Singa. A railway extension to this place from Sennar is wanted. On the Abyssinian frontier, and in the remoter districts of Dar Fung (where Soda post was established in 1903), the Tabi hills, and farther south where the administration has not yet reached, there have been not infrequent disturbances, as in 1905, 1910, and 1917. The more settled northern portions on and near the Blue Nile are prosperous. In 1902 revenue nearly balanced expenditure. There were small fanatical outbreaks in the Gezira in 1904 and 1910, and Fellata immigrants in 1916 gave cause for anxiety also on this score. Food and employment in the bad years, 1913–14, were plentiful, and attracted many temporary immigrants from the north and west. There has been archæological excavation at Jebel Moya and Segadi, which gave useful employment. The Gezira irrigation project involves a dam at Makwa, on the Blue Nile south of Sennar, and a canal (see p. 120). The latter was begun in 1914, but all was suspended by the European War. There is a good deal of malaria, and a little of the fatal *kala azar* in the province. The people of the south are most primitive, and still largely unknown.

Red Sea.—Called Suakin province up to 1906. Capital, Port Sudan, formally opened on April 8, 1909. A credit balance was first shown in 1911. On January 17, 1912, the King and Queen visited Port Sudan and Sinkat.[1] In this province, first of all in the Sudan, a civilian was appointed Governor (in 1908). Railway extension from Suakin to Tokar is desirable (see p. 84).

Kassala.—Frontier problems with Eritrea and Abyssinia have always called for much attention. Some

[1] Since this date, the Seventeenth of January has been observed annually throughout the Sudan as "King's Day" and a general holiday.

of the tribes have proved troublesome, as the Gemilab in 1914, the Shukria and Hadendoa in 1917. An outlaw band under Abu Bakr was hunted down on the Atbara in 1914. There has been a good credit balance since 1909. Railway communication with Kassala town is badly wanted (see p. 83).

Kordofan and Nuba Mountains.—Separated as from January 1, 1913 (financially from January 1, 1914). El Obeid was reoccupied on December 17, 1899, and the whole huge province (then 167,000 square miles, now, by readjustment, Kordofan is 112,500, Nuba Mountains 32,200) was found devastated and depopulated by the Dervishes. From 1901 to 1905 many tribes, as the Hamar, Gowama, Awaida, Taaisha, &c., were brought back to their former homes in the province, whence the Khalifa had forcibly or otherwise removed them. There has also been much immigration of new folk from the west, as the Berti to Dar Hamar in 1904, and the Fellata, Hausa, and Takruri, who settle permanently *en route* to or from Mecca. Immigration from Darfur was forbidden (to conciliate Ali Dinar) in 1905. The towns of El Obeid, El Nahud, and Shershar have grown greatly in size.

The revenue of the province doubled between 1908 and 1913, and the surplus of £E.38,000 in 1912 surpassed that of any other province. The railway from Sennar *via* Kosti to El Obeid was opened in 1912. A slave-raiding gang was suppressed at Kailak in 1902, and this evil is now at an end. Even the Baggara tribes are learning to work for themselves. Long-existent intertribal feuds, as of the Kababish with the Beni Gerrar or Kawahla, and the Hawazma with the Messeria, are persistent. Raids from Darfur of Bedaiat and Gura'an have provoked reprisals in the north-west.

Kordofan, on the whole, has prospered and developed greatly, and its one source of anxiety now consists in the variations in the market price of gum, on which its welfare almost wholly depends. The Nuba Mountains province, on the other hand, has been and remains

constantly disturbed. The Nuba inhabitants, persecuted remorselessly by the Dervishes, have lasting feuds with the Arabs, and equally among themselves, and, trusting in their well-nigh impregnable and inaccessible rocky mountain fastnesses, honeycombed with galleries and caves, remain distrustful and often defiant of Government, a traditional hostility reaching back to the days of Mehemet Ali. All the mountaineers are now well armed with rifles obtained by raid and trade from Dervishes and Arabs.

Scarcely a year has passed without some disturbance with these hillmen. They enjoy a fight, and the most slender pretext is enough to provoke a raid on a neighbouring mountain; they are, however, said to be continually taunted by their women with "not being the men their fathers were." Hence the history of the period is that of one long series of punitive expeditions to the different *jebels* to enforce the maintenance of order, and, if possible, respect for the new Government. The years 1908-1910 and 1914-1917 were especially full of such expeditions, the restlessness of the latter years being certainly in part a reflex of the alarmist rumours concerning the situation in Egypt provoked by the European War. The list of such disturbances and patrol visits, often accompanied by stubborn, if brief, fighting, in which at times Arab sufferers from Nuba depredations have joyfully co-operated with the Government police and troops, includes those at Jebel Buram (1908-1917), Dagig (1910, 1913), Heiban (1911), Krongo Bakhait (1911), Tagoi (1910, 1911), Tira el-Akhdar (1914, 1915), all in Talodi district; Daier (1904), Eliri (1906), Nying Nying (1906), Katla Karun (1910), Shat el-Safia (1904), Miri (1915), and other hills in Kadugli district (1913), and in Dilling district, the worst of all, Dulman (1914), Fanda (1908), Kadaro (1906), Katla Kidu (1908, 1909), Mandal (1904, 1914), Sabei (1914), Tima (1909, 1910), and Nyima, the most formidable hill group (1906, 1908, 1914, 1916, 1917), whose inhabitants were finally reduced to submission for the first time in their his-

tory by serious military operations lasting from April 1917 to February 1918.

Upper Nile.—Called Fashoda down to 1903. Capital moved in May 1914 from Kodok to Malakal. Its southern portion became Mongalla province in 1906.

In both this and Mongalla province communications, owing to climate, rains, and swamps, are difficult both to open up and to keep open. The history of Upper Nile province is mainly that of the Shilluk, Dinka, and Nuer peoples[1] and the Government's relations with them. The Shilluk have given little trouble. Mek Yor was deposed in 1903, and removed to Wadi Halfa. His successor, Mek Fadiat, was loyal to his death on February 6, 1917. A bare majority of the votes of the five tribal chiefs, amid much excitement, then elected Mek Farfidi, when only the presence of a Government force prevented bloodshed. Some small Shilluk disturbances occurred in 1911 (caused by the regulations forbidding the slaughter of elephant herds by means of grass fires), in 1915, and in 1916. The Dinka have been both quarrelsome and lazy, especially the Khor Filus Dinka, who had to be compelled to pay their head tax in 1909. The Nuer, who form half the population and occupy half the province, have from the first been a difficult problem, the despair of the Governor, and still so remain. Savage, warlike, and suspicious, they have fought continually among themselves and with their neighbours. The Gaweir Nuer on the Bahr el-Zeraf gave much trouble in 1913 and 1914, but in 1916 paid their tribute. Punitive patrols were despatched against the Lau and the Garjak Nuer in 1917, both being old rebels against the Government. The Nuer country is one of the problems of the future. Financially the province has made good progress, showing a surplus first in 1911, which was more than doubled in 1912.

Mongalla.—Created in 1906. The military Sobat-

[1] See above, p. 39.

Pibor district was created out of it in 1912.[1] The frontier readjustment with Uganda dates from January 1, 1914.[2] The Beir tribe has constituted its chief domestic perplexity. From 1907 their raids on the Dinka were frequent, but a strong military expedition to Lom in the spring of 1912 subdued them. The Latuka country has recently been opened up. The Nilotic folk, especially the Bari, remain hopelessly lazy. The province does not yet pay its way.

Bahr el-Ghazal.—The Egyptian flag was hoisted at Meshra el-Rek in September 1898, but a military force first reached the place on December 13, 1900. In June 1901 Sultan Tembura, on the Nile-Congo divide, was visited. In 1902 military posts were established at Wau, Tonj, Rumbek, Shambe, and elsewhere, and a civil administration replaced the purely military occupation. By an ordinance of February 7, 1907, the Sudan codes were first applied to the province.

The eastern district has throughout called for much attention, owing to the unruliness of its Dinka and Nuer inhabitants. The Gok and Shish Dinka have been peaceable, the Agar and Atwot Dinka very much the reverse. In 1901 the Agar Dinka murdered a British officer,[3] and were punished. They remained unfriendly in 1916. The Atwot Dinka on Lau River, and their chief Ashwol (Loitch section), have been continuously hostile since 1903, and quarrel also freely among themselves. Punitive expeditions in 1907 and 1910, and a visit of the chief to Khartum in 1911, made no lasting impression. In 1917, Ashwol was still at large, defying the Government, and the Atwot attacked a Government post at Gnopp. Vigorous military measures were taken against the tribe in 1918. In 1914 and 1915, the Nuer raided the Dinka near Lau and Rumbek, and the latter resent the payment of tribute in consequence.

In the central district the old question of grazing

[1] See above, pp. 2 *n.*, 40.
[2] See above, p. 41.
[3] Lieutenant Scott-Barbour.

rights on the Bahr el-Arab has led to continual quarrels between the Dinka of the north of the province and the Rizeigat Arabs from Darfur. In 1908, the Dinka attacked the Arabs (a novel venture on the part of a negro tribe); in 1909, the Arabs retaliated, and Nyamlell post was established to protect the Dinka. Arbitration in 1912 had some success. In 1914, the Dinka raided the Golo on the Wau–Chak-Chak road. In 1915, the Rizeigat again returned to the attack. In 1917, the Dinka remained restless and fractious.

The western, the only Moslem district, remains largely unadministered. There is much smuggling of arms into it. There are numerous petty tribes, each with its sultan. In 1907 district headquarters were moved from Dem Zubeir to Raga, and in March 1916 a regular garrison was placed at Kafia-Kengi. There was a Mandala raid in 1914 on the road to Abu Gabra, which is much used by Fellata pilgrims.

The Zande tribes of the Nile-Congo divide, a fine folk, are now well in hand. Sultan Yambio and his son Mangi were hostile in 1903-4, and were attacked in 1905, when the Sultan died of wounds. Mangi made submission and remained quiet till 1914, when he broke out again and was deported to Khartum, dying there in February 1916. There were other disturbances to the peace in the Yambio district in 1914, and a secret orgiastic society, the Bir, gave cause for anxiety here in 1916 and 1917. In 1918 it was still troublesome. A small mutiny in a company of the newly-raised Equatorial Sudanese battalion belonging to the district was easily suppressed in 1914. Sultan Tembura, on the other hand, was consistently friendly from the time of the mission to his district in June 1901 to his death in March 1914, when he was succeeded by Renzi, his son.

The hopes once entertained, as by Romolo Gessi, of the potential riches of the province, though probably justified, have so far not proved to be so. Much of its ivory finds its way over the watershed, or to the Greek traders in the old Lado Enclave, and its wild rubber

has proved a disappointing failure. Very large tracts of country in the central plains between Mvolo and Dem Zubeir are infertile and uninhabited. The province has never paid its way, and the annual deficit is considerable. On the other hand, all the south-western drier ironstone lands rising to the watershed are healthy, extremely fertile, and in places thickly populated. The value of the timber in this region is enormous. Its mineral wealth is an unknown quantity, but if, as may well be probable, the Nile-Congo divide is found to contain anything like the riches discovered in other parts of the great "backbone of Africa" to the south, the prosperity of the province is assured. At present its communications are bad and its administration most difficult. Without railway facilities little can be expected in the way of mineral discoveries or general development (see p. 84).

Strategically, the province is of importance to the control of the Nile waterway, and this dictated the Government's attitude to the Marchand Mission in 1898 and the Lemaire Mission in 1904.[1] It also supplies plentiful and admirable recruits to the Sudan army alike from its Zande and from its Dinka and other negro tribes. Geographically, too, it belongs to the Sudan—however costly a possession—and to the Sudan only.

Darfur.—Incorporated in 1916. Its population is estimated to be a little over 1,000,000;[2] capital, El Fasher. The northern deserts in this province are barren, arid regions, capable of producing little beyond camels for the transport of merchandise and produce of the agricultural districts, which stretch from east to west across the centre of the country. Farther south and south-west (sixty miles from El Fasher) are the uplands of Jebel Marra, said to be

[1] See above, pp. 31 and 33.

[2] Meyer (Convers. Lexikon) states that the highest estimates place it at 1,500,000.

fertile and well watered. The wild Baggara, or cattle-owning Arabs, roam the plains of the west. The Masalit country, and the western districts generally, are rich in pasture lands, and maintain a large stock of cattle and sheep.

Here, as elsewhere in Africa where no permanent waterways exist, the economic and social progress of the country will largely depend upon the construction of railways (see p. 84), which are obviously desirable also on strategic grounds.

III. SOCIAL AND POLITICAL CONDITIONS

(1) Religious

The northern Sudan, roughly north of 10° north latitude, is exclusively Moslem (Sunni); the southern predominantly pagan. The distinction corresponds to one of race. The Arabs, Beja, and Nubians (Barabra) are Moslems to a man, always liable to become the prey of fanatical excitement. Among the negroid population of the south Islam has made scarcely any progress, except to some very slight extent recently among the inhabitants of the western Bahr el-Ghazal, on the French frontier, and at Wau. But Mohammedan propaganda has always been, and remains, languid among the peoples regarded by the Arabs for long years as material for enslavement rather than for conversion. Neither have the southern Sudan tribes shown any desire to embrace Mohammedanism. If, e.g., a Shilluk journeys north and returns to his folk a convert to Islam, he is regarded as a degradation to his tribe.

Thus the southern Sudan remains almost entirely pagan—virgin, if not very promising, soil for cultivation by the Christian missionary. Only the fifth element in the Sudan population, the Nuba, is divided between Mohammedanism and paganism, Islam having made some progress in the northern hills, and even reputed pagan hills, such as Dilling, having come recently under Moslem influence. But the great majority of the Nuba are still pagans, and magic (especially for rain-making purposes) plays an important part in

their ceremonies. The native religion is said to grow more vague, superstitious, and debased the farther south one proceeds.

(*a*) *The Northern Sudan; Mohammedanism*

Ever since the Mahdia the danger of fanatical outbreaks has been persistent. A list of abortive risings has already been given (p. 42). Constant watchfulness and instant action on the part of the Government are still needed, though the danger recedes with the spread of education in the northern Sudan and the increase of prosperity. Mahdiism is not yet totally extinct as a faith, and the ignorance of superstitious credulity is easily excited, especially among the Baggara. It is but a step from latent belief in Mahdiism to active revolt against government.

The constant tendency of Mohammedanism to create minor sects (*Tarikas*), as apart from the four main Sunni divisions of Islam, is also visible in the northern Sudan. Such sects are not necessarily disloyal. Thus the *Morghani* in the eastern Sudan were loyal in the Mahdia. The *Khatmia* sect exercises to-day a widespread influence from Kassala, and was similarly loyal. At present two brothers, Ahmed and Ali, are heads of the family, but they are not on good terms with one another. The former was educated by the Dervishes, the latter under Government influence. The *Ahmedia* sect has to-day a following among the fanatical Danagla—to whom the original Mahdi belonged. Its leader is Mohammed Abdul Mutal, who is connected by marriage with the Senussi and by blood relationship with the Idrisi of Asir (Arabia). *Senussi* influence in the Sudan reached low-water mark with the failure and death of Ali Dinar in Darfur, where alone it had made some way. A small sect found at Sinkat (Red Sea province) in 1915 has tenets akin to those of the notorious *Wahabi* Tarika, which in the Hejaz has not been very well disposed to the Sherif of Mecca. But its founder, Mohammed Madi, was removed to Egypt, and, in view of the passive fatalism

of its creed, the sect is probably not dangerous. The difficulty in dealing with all such sects is their elusive character. Orthodox Mohammedanism dislikes them, and thus no leader of a sect can be officially recognised as such by the Government. As their adherents wear no distinguishing mark, so much the greater is the need for official vigilance. Large numbers, too, of Mecca pilgrims from West Africa—Fellata, Takruri, Hausa—pour annually into the Sudan, and many remain as permanent settlers, the estimated number in 1912 being 16,000. They are splendid and cheery workers, and are encouraged by the Government. But their religious zeal makes them extremely fanatical, and in this respect they need watching.

The policy of the Sudan Government has always been, and remains, that of encouraging Islam in all its legitimate modes of expression. It has built and maintained many mosques all over the country. Christian propaganda and proselytism are forbidden in the northern Sudan. Christian churches and schools are allowed only in Khartum city, and the greatest precautions are taken to make it clear to the inhabitants that the attendance of children at such schools is voluntary. In the Gordon College itself Christian students are a very small percentage of the whole number. Outside Khartum no Christian missionary is authorised to preach in any part of the northern Sudan, but there are missionary schools at Khartum, Khartum North, and Omdurman. In all Government schools and colleges teaching of the Koran and vernacular Arabic are marked features of the work. The loyalty of the Ulemas and leaders of Mohammedan thought through the country on the outbreak of the war with Turkey at the end of 1914 was a natural consequence and due reward of the Government patronage of Islam in the northern Sudan. The early Government pledge of non-interference with any man in the exercise of his religion has been loyally kept. The Khartum Cathedral, built from the design of Mr. Weir Schultz,

in memory of Charles George Gordon, is a handsome and substantial red-sandstone structure, eminently suited to cope with the exigencies of a tropical climate.

(*b*) *The Southern Sudan; Christian Missions*

The religious and magical beliefs of the greater tribes of the southern Sudan (especially the Bari, Burun, Dinka, Golo, Shilluk, and Zande) are of the greatest diversity and interest. Among these peoples the Government encourages Christian missions, and has allotted strict geographical limits or "reservations" to the different churches, viz.:—

(1) The Austrian Roman Catholic Mission (headquarters, Khartum), west of a line drawn along the Bahr el-Ghazal to Meshra el-Rek, and thence to the Nile-Congo Divide. Stations at Lul and Tonga on the White Nile, Wau, Kyango, Mbili (all in Bahr el-Ghazal province), and at Dilling (originally established 1874). The Mission was temporarily suspended in 1916.

(2) The Church Missionary Society, in the country east of the above line (from 1905). Stations: two in Mongalla province and one at Yambio (Bahr el-Ghazal province).

(3) The American Mission to the Shilluk. Station: Doleib, on the Sobat (founded 1902).

(4) Sudan United Mission to the Dinkas (founded 1913). Station: Melut, east of the White Nile in Upper Nile province.

The medical work of all these missions is productive of obviously good and immediate results. Actual conversions have hitherto been very few in number. The hope for the future resides with the children, and with the children only. The insistence on the duty of monogamy is here, as in Uganda, a great hindrance to the spread of Christianity. Among the Zande a secret religious society, the Bir, with undesirable rites, continues to cause trouble.

(2) Political

The origin of the present system of government has already been described (p. 31). The condominium of Great Britain and Egypt, established by the Agreement of January 19, 1899, gave the Sudan a form of government in most respects autonomous.

The supreme military and civil command is vested in the Governor-General, who is appointed by Khedivial decree on the recommendation of the British Government, and is removable only by such decree and with the consent of that Government. In the discharge of his legislative and executive power he is (since January, 1910) assisted by a Council, created on the analogy of the Executive Council of the Governor-General of India, consisting of four ex-officio members and from two to four others appointed by him. He can overrule the Council's decision. All laws—Sudan Ordinances—are the decisions of the Governor-General in Council, issued by him as proclamations. These have to be notified to Cairo, but are independent of any power of objection or amendment by the Egyptian authorities. Appointments to and promotions in the Sudan Government Service and all military matters are excluded from the competence of the Council. Other matters for formal decision by the Governor-General in Council are the annual budget and all supplementary credits, and in general all administrative and legislative concerns submitted by the various departments, or those which the Governor-General himself wishes to refer to Council. In other matters which come up for discussion the Council acts as an advisory body to him.

Except for the Department of Irrigation and for one measure of financial control (the Sudan budget is submitted to Egypt for approval and audit), Khartum is practically independent of Cairo. No Egyptian law, ordinance or ministerial decree applies to the Sudan unless by the Governor-General's proclamation. Decentralization is the keynote of Sudan government. The

Provincial Governors have great latitude of action, and possess the widest powers. The annual reports from the Governor-General incorporate those from the various departments of administration and from the Provincial Governors, and are forwarded to the British High Commissioner in Egypt, who then sends them, with a covering note of his own, to the Foreign Office in London.

The higher officials (the Governor-General himself, the heads of departments, and the Provincial Governors and Inspectors) are British, and the majority have been Army officers. The Civil Service is recruited (up to 1914) by nomination of candidates from the Universities of Great Britain and Ireland. The choice of these rests ultimately with the Governor-General, who also nominates the Provincial Governors and the Provincial Inspectors (the latter from the ranks of the Civil Service).

The Mamurs (police officers and magistrates of districts into which the provinces are divided) are Egyptian or Sudanese officers. Their employment in these responsible positions has been generally justified. Increasing use is made of Sudanese for minor administrative and clerical posts under Government.

There is a comprehensive system of jurisdiction based on the Sudan Penal Code (1899), the Code of Criminal Procedure (1899), and the Civil Justice Ordinance (1900). By the provisions of the last-named Ordinance Mohammedan law (Mekhema Sharia) is applied in many cases where the parties concerned are Moslems. The higher judges and magistrates are British, but Mohammedan law is administered by *kadis* in special Courts (Appeal, Provincial, and District), who are paid by Government and are under the supervision of a Grand Kadi. It is one of the most important branches of the work of Gordon College to educate young natives for the position of local kadi. The work of the Mohammedan law courts is constantly increasing, as is the confidence reposed in their decisions by the Moslem inhabitants of the country.

Throughout the country tribal law and custom are administered by native sheikhs and chiefs recognised or appointed by Government. There is always appeal from their decision to a Government official, and they may not impose any capital sentence. But within these limits the Government, so far as is possible, refrains from interference with the application of tribal codes, which are often elaborate. Customary law is definitely recognised "so far as applicable and not repugnant to justice, equity, and good conscience" (a familiar principle in Eastern government).

Though the political conditions of the Sudan still require that the military element must, alike in personnel and method, wield a preponderating influence in the Government, yet the civilian administration tends to acquire an ever larger share. The employment of the native element in the Administration is also increasing, thanks to the steady policy and encouragement of the Government.

(3) Educational

Hitherto the Government system of education has been confined to the peoples of the northern Sudan. Its extension to the Nuba and negroid peoples of the south has not yet been possible.

To-day the schools and educational institutions which come directly under the central authority of the Sudan Education Department fall into five classes:—

(1) *Elementary Vernacular Schools (the "Rate-aided Kuttabs").*—These are graded into two classes: first (in towns) and second (village schools). They are staffed by native teachers trained at Gordon College and paid by Government. Age of admission, seven to ten years. Elementary Arabic and arithmetic, and, where possible, reading and writing are taught, but not English. In some provinces these schools are partly supported by a small voluntary rate. Parents who do not contribute are expected to pay small fees for their sons' first two years' schooling. The *kuttabs* are a

notable success. In 1913 there were 28 first class and 21 second class schools, educating some 4,000 boys. One such school for fifty girls was established at Rufaa (Blue Nile province) in 1911. There were also, in 1916, girls' schools at Dongola, Merowe (Merawi) and Kamlin, numbering 35, 20, and 44 girls respectively. The number of *kuttabs* has been steadily increasing. In 1916 there were 56, with a total number of about 4,375 pupils.

(2) *Primary Schools.*—Instituted for the education of the sons of Government employees and of natives of higher social standing than the bulk of the population. They are eight in number (at Khartum, Omdurman, Halfa, Berber, El Obeid, Atbara, Wad Medani, and Suakin). Age of admission, eight to eleven years. Qualifying entrance examination (all except the Khartum school have preparatory sections). Fees, 300 pt. a year. There is a boarding-house at the Khartum school. English is taught, as the intention of these schools is to train native boys to fill junior positions in Government employ, on the railways, &c.

(3) *The Upper School, Gordon College.*—A secondary school for boys who have completed their primary course. Training, intended to last four years, is either literary (for candidates for future employment under the Department of Education as teachers, translators, &c.) or scientific (for those to be employed in the Departments of Public Works, Irrigation, Survey, and Railways). The number of pupils in the school in 1916 was 60.

(4) *The Training Colleges.*—Two in number, one at the Gordon College, the other at Omdurman. The former is for sheikhs' sons, mainly to educate them to be kadis in the Mohammedan law courts. They must have been at a primary school or in the corresponding preparatory section at Gordon College. Age of admission, twelve years. Boys must be of good birth and specially recommended as suitable. The number of pupils in 1916 was 52. The latter college is intended for training teachers for the *kuttabs*. The course lasts

three years. The number of pupils in 1916 was 50.

(5) *Instructional Workshops.*—For the technical education of boys who have attended a *kuttab*. They are three in number (at Gordon College, Omdurman, and Kassala). The workshops are staffed by British managers and assistants with Egyptian artisans to help them. Age of admission, 14 years. Length of course, 5 years when possible. Subjects taught: carpentry, smiths' work, fitting, machine-running, masonry, pottery, cotton-ginning, &c. The number of pupils at the three workshops in 1916 was 154, 53, and 35 respectively.

The total number of pupils under instruction by the Education Department was 4,118 in 1911 and 5,226 in 1913, 5,000 of these latter being Moslems. Affiliated to the Gordon College are the Wellcome Government Research Laboratories, where investigations are carried on in connection with human, plant, and animal diseases, and with the economic products of the country. A Central Research Farm has been organised at Khartum North, under the auspices of the Education Department, for the furtherance of agricultural research and education. Laboratories have been built for the study of agricultural botany, physiology, and bacteriology. Comparative field experiments with such staple crops as cotton, wheat, and lubia are supplemented by the study of plant introduction, seed selection, horticulture, experimental forestry, and market gardening. The geological survey, the antiquities service, and the natural history museum are also attached to the Education Department. From the opening of Gordon College at Khartum (on November 8, 1902) to the present day the system of public education in the northern Sudan, of which that college is the very keystone, has developed on lines carefully thought out. Alike, the system and its administration are altogether admirable. The whole welfare of the country, both present and future, is bound up with it.

GENERAL OBSERVATIONS

Summary of Progress. The European War

Twenty years have passed (1918) since the reconquest of the Sudan. In this short space of time much progress has been made. There have been instituted systems of administration, both central and local, of jurisdiction, and of education, and a civil service Peace has been secured and order maintained Fanatical outbreaks have been instantly checked. Slavery has been suppressed. No enemy has attacked from outside. The rebel Sultan of Darfur has been slain and his country annexed. Intertribal warfare has been greatly diminished. Friendly relations have been constantly maintained with neighbouring administrations. Only in the Nuba Mountains and in the Nuer country are military expeditions still needed, and these on no large scale. The administration has not yet fully penetrated to the south-eastern and western extremities of the country. The state of the Abyssinian frontier is one of constant unrest; and the work of pacification is thus not yet fully complete. But by far the greater part of the Anglo-Egyptian Sudan is now a land at rest. Perhaps for the first time in the whole history of the country, a man's life is now secure against violence, and his property against injustice and extortion.

Much remains to be done, but the experience of the years 1898-1918 suggests no change of method or temper in the administration. The needs of the Sudan are obvious. Capital is wanted for many schemes, first and foremost for railway extension. Labour is hard to find—for Arab dignity is the product of many generations accustomed to the mastery of slaves; and negro inertia is content with a minimum of comfort if it may enjoy repose. Education may be widely extended. A Government is needed in Abyssinia strong enough to keep the peace on its borders. The Civil Service is too short-handed. Economic development lags far behind its possibilities. But progress, in all respects, has been

far more rapid than was believed possible in the early days of the period, and there is no room in the Sudan for impatience, irritability, or ill-considered haste.

The final test of fifteen years of work came with the outbreak of the European War, and especially Turkey's share in it at the end of 1914. The loyalty of the Arabs, the quiet of the negroes, might then well have been shaken. Both were rooted in contentment and stood firm. Martial law was proclaimed at Khartum on November 14, 1914, and an emissary from Enver Pasha, sent to tamper with the officers of the army, was captured at Port Sudan. Neither this nor the declaration of the British Protectorate over Egypt, on December 18, 1914, caused any excitement. The threat of invasion to Egypt both from east and west produced a crop of alarmist rumours, but no open disaffection, save in Darfur, and the peril passed away. Memories of former Turkish iniquities in the land were still vivid. The religious authorities, the Ulemas of Khartum and through the country, always sympathetically treated, honoured, and consulted by the Government, had no interest in any holy war on behalf of the Sultan of Turkey or of a traitorous and deposed Khedive of Egypt.

The truth of Sir Reginald Wingate's words was certain: "We English have spared no pains and expense to improve the lot of the people in every way."[1] The Sudan is more than ever vital to Egypt for the latter country's security and the control of the water of the Nile. But the regeneration of the country since 1898 has brought peace and prosperity to the Sudan itself, as well as safety and wealth to Egypt.

[1] Speech to the Ulemas at Khartum on November 8, 1914, on the outbreak of the war with Turkey.

IV. ECONOMIC CONDITIONS

(A) MEANS OF COMMUNICATION

(1) Internal

(*a*) *Roads, Caravan Routes, Paths, and Tracks*

In the tropical regions of the southernmost portions of the Anglo-Egyptian Sudan communication is confined to a network of native bush-paths and tracks, human porterage being almost the sole means of transport. Over the remaining and far larger area desert conditions prevail, and road communication is effected by means of riding and baggage animals travelling over caravan routes. In certain districts, notably in the provinces of Bahr el-Ghazal, Mongalla, and Kassala, and the southern part of the province of Kordofan, roads have been made and wheeled and motor transport introduced.

The general scheme of road communication in the Sudan is governed by both military and economic considerations, the object being to maintain a well-defined system of roads adequately provided with water. Across deserts the routes necessarily lie between wells and water-holes. The following are some of the main cross-country caravan and trade routes:—

The Darb el-Arbain (i.e., forty days' road), between El Fasher (Darfur) and Assiut (Egypt), a distance of 1,000 miles. The normal time taken is 32 marching days (31 miles a day), and 8 resting days spent at the wells and oases. This route passes through the natron deposits of Lagia and the oases of Selima and Kharga.

It is little used except by smugglers, and should not be attempted without guides.

Korosko to Abu Hamed, 240 miles across the Dongola bend of the Nile. At Murat Wells this route is joined by the Halfa–Murat road (110 miles). Before the construction of the railway this was the main road between Egypt and the Sudan.

Korti to Metemma and Shendi, 176 miles, used by date caravans from Dongola.

Debba to Khartum, 210 miles, used by date caravans between Dongola and Omdurman.

Debba to El Obeid, 362 miles, connecting the Dongola province with Kordofan, also used mainly by date caravans.

Berber to Suakin, 241 miles, connecting the Nile valley with the Red Sea. As a trade route this has been superseded by the railway.

Berber to Kassala, 246 miles, connecting the Nile valley with the Kassala province *via* Atbara.

Kassala to Khartum, 205 miles. This route has been improved to make it fit for motor and wheeled traffic.

Kassala to Tokar and Suakin, 297 miles, connecting Kassala with the Red Sea.

Kassala to Keren and Massawa (Eritrea), 240 miles. Beyond Keren, 150 miles from Kassala, either the Italian railway or wheeled transport can be used. This is the main trade route between the Italian colony of Eritrea and the Sudan.

Kassala to Gedaref, 130 miles.

Gedaref to Gallabat, 94 miles.

Gallabat to Lake Tsana *via* Chelga, 90 miles.

The last three routes named are trade routes to Abyssinia. Gedaref is connected with the Blue Nile at Singa, 170 miles distant, and Gallabat is also connected with the Blue Nile by 150 miles of road.

Renk to Roseires, 130 miles, connecting the White and Blue Niles.

Roseires to Dunkur (Abyssinia), 140 miles. The Abyssinian-Sudan frontier is crossed about half-way.

Gallabat to Dunkur, 80 miles.

El Dueim to El Obeid, 155 miles, connecting Kordofan with the Nile, but now superseded by the railway.

El Obeid to El Fasher, 446 miles, connecting Kordofan with Darfur.

El Obeid to Talodi, a Government post at the foot of the Nuba Mountains, 275 miles.

Talodi to Tonga, on the White Nile, 101 miles. This road can be used by motor and wheeled traffic.

Meshra el-Rek to Wau, 107 miles.

Shambe to Wau, 262 miles. Both this and the previous route have been improved to admit of wheeled traffic.

Shambe to Yambio (Bahr el-Ghazal) *via* Mvolo and Meridi. During the dry weather carts drawn by oxen and mules are used along this road. Beyond Yambio, to Tembura, human porterage is the only possible means of transport.

Rejaf to Aba (Belgian Congo) *via* Loka and Yei in the old Lado Enclave, 147 miles. This is the main trade route from the Upper Nile to the Belgian Congo, and both motor and ox-cart transport are available along it.

Rejaf to Entebbe (Uganda) *via* Nimule on the Nile and Butiaba on Lake Albert. From Rejaf to Nimule, 150 miles, is a 5 to 8 days' march. Thence a small steamer runs to Butiaba, 165 miles, 136 of which are on the Nile and 29 on the lake. From Butiaba to Entebbe, 180 miles, is a 10 days' march. The alternative method of making this journey is by motor road to Lake Kioga, thence by rail, 40 miles, to Jinja, and thence by lake steamer to Entebbe. For various reasons it is easier to travel from Uganda to the Sudan than in the reverse direction. Porters in Uganda are easily obtained, as the natives, unlike the inhabitants of the Sudan, are accustomed to carry loads. Unless arrangements are made beforehand, the traveller from the Sudan usually has to remain at Rejaf until porters can arrive from Nimule or even from Entebbe.

Transport Animals.—The camel is the most useful animal for transport purposes north of about 12° north latitude. Large numbers of donkeys and mules are also used, and these are indispensable in the hilly regions. In southern Kordofan bulls are used for riding, and merchandise is carried on pack-oxen. The horse also is bred and used for riding purposes in Kordofan, in parts of the Dongola province, and in the northern portion of the Gezira (between the White and the Blue Niles), but its incapacity to travel long distances without water detracts from its utility. Ponies and country-breds are to be obtained near the Abyssinian border. The principal horse-owning tribes in the Sudan are the Homr and the Messeria-Baggara in southern Kordofan. Some of the horses bred by the latter are trained to travel, in an emergency, as much as 60 miles without water.

The chief breeding grounds of the camel are to be found in the Nubian desert (between the Nile, north of Berber, and the Red Sea), and in the Kababish and other districts in southern Dongola, also in the Hadendoa country, in the Red Sea province, and in northern Kordofan. In these districts a better breed of camel is produced than the slow transport animal of Lower Egypt. The average camel load is 360 lb., and the average daily distance a baggage camel will travel is about 20 miles. Camels on the march usually require watering every third day.

Mules are only obtainable from Abyssinia, or from Gedaref, Gallabat, Roseires, and Itang; they are suitable for pack-transport, but not for draught work.

Donkeys are to be bought in most parts of the country. The usual donkey load is from 110 to 150 lb., and if the whole journey is not long, progress can be made at the rate of 20 miles a day. The Sudan donkey does both riding and baggage work, but the Abyssinian animal objects to being ridden. Pack-oxen are used in southern Kordofan and in northern Bahr el-Ghazal. They are docile animals of the hump-backed species, and can carry from 150 to 200 lb.

(*b*) *Waterways*

Of primary importance in the life of the Sudan, as a means alike of communication and of irrigation, is the *Nile*,[1] which, with a total length of about 3,470 miles, is the longest river in Africa and the second longest in the world. Issuing by way of the Ripon Falls from Victoria Nyanza (Lake Victoria) in Uganda, at an altitude of more than 3,700 ft., it follows in the main a northerly course until it reaches the Mediterranean at Damietta in Egypt. For more than three-fifths of its course it flows through the Sudan.

For purposes of easy reference the Nile is usually divided into three sections: the Upper Nile, from the source to Lake No; the White Nile, from Lake No to Khartum; and the Main Nile, formed by the union of the Blue Nile and the White Nile, from Khartum to the sea.

(i) The *Upper Nile*, known to the natives as *Bahr el-Jebel* (river of the mountains), enters the Sudan at a point just south of Nimule, the first Anglo-Egyptian Sudan post. Below Nimule the river narrows and becomes a series of foaming torrents among rocks and boulders in the Fola Rapids and the Bedden Rapids for a distance of nearly 100 miles to Rejaf, whence it is navigable by large steamers to Khartum, a distance of about 1,100 miles. The river passes the old stations of Gondokoro on the right bank, Lado (28 miles from Rejaf) on the left, and Mongalla, 21 miles farther down, on the right bank. It then flows on to Bor (116 miles below Rejaf); and thence by many channels through a swampy region to Shambe, 128 miles

[1] There are considerable discrepancies in the estimates of the distances on the Nile as given by various authorities. The figures here given are for the most part taken from the tables in *The Anglo-Egyptian Sudan*, edited by Lord Edward Gleichen, except those relating to the cataracts, which are from *The Physiography of the River Nile and its Basin*, by Captain H. G. Lyons.

farther on, continuing through the *sudd* region (see below, p. 75), an expanse of papyrus and swamp vegetation with some stretches of open water, to Lake No (496 miles from Rejaf and 612 miles from Khartum), where it is joined by the Bahr el-Ghazal.

(ii) The *White Nile*, known to the natives as the *Bahr el-Abiad*, or white river, owing to the colour of its water at all seasons, flows from Lake No in an easterly direction, being joined after 65 miles by the *Bahr el-Zeraf* (river of giraffes), a stream which, formed by an overflow of the Bahr el-Jebel near Shambe, offers little outlet for trade but contributes considerably to the volume of water in the White Nile.

Thirty-one miles beyond the confluence of the Bahr el-Zeraf is that of the Sobat; five miles below which is the military post of Taufikia, and, seven miles lower still, Malakal (right bank), the administrative centre of the Upper Nile province. Forty-five miles below Malakal is Kodok (left bank), better known by its former name of Fashoda, and 161 miles beyond is Renk (right bank). At Jebelein, 60 miles farther on, a series of rocky reefs across the river makes navigation perhaps more difficult than at any other spot. A channel has been buoyed, but it is desirable that a passage should be dredged between the rocks. Below Kosti and just above Goz Abu Guma, which is 46 miles below Jebelein, 192 miles from Khartum, and 324 miles from the mouth of the Sobat, the Khartum–Sennar–El Obeid railway crosses the river. Some 70 miles north of this bridge is El Dueim, the old river port of Kordofan, whence it is 125 miles to Khartum. The Nile as it nears Khartum is over a mile wide, with an average depth of $6\frac{1}{2}$ ft.

The principal navigable tributaries of the White Nile are the Bahr el-Ghazal and the Sobat. The *Bahr el-Ghazal* is permanently navigable for a distance of 150 miles only, from Meshra el-Rek to Lake No. It has several important tributaries, the chief of which is the *Jur*, which joins it 25 miles below Meshra el-Rek. Others are the *Jel*, the *Tonj*, the *Pongo*, the *Kuru*,

and the *Bahr el-Arab*, all of which, like the Jur, have their sources in the Nile-Congo watershed. The Jur is navigable by river steamers as far as Wau (160 miles) during the season of high water, between July and October, but even then with difficulty in the narrows, where the passage is choked with masses of floating vegetation. For the remainder of the year the channel is completely blocked. Small steamers and boats can proceed beyond Wau for a considerable distance during the season of high water, and can also under favourable conditions ascend the tributaries of the Jur, the *Sueh* and the *Wau*, for 30–40 miles.

The *Sobat* or *Bahr el-Asfar* (yellow river), of which the section from the source to the confluence of the Pibor is known locally as the *Baro*, rises in the Abyssinian highlands. It is at its lowest about the end of April. Navigation in flood time (June to December) begins at Gambela, 100 miles from the source of the river, and 355 miles from its confluence with the Nile. Forty miles below Gambela on the left bank is Itang, and 80 miles down-stream is the confluence of the *Khor Adura*, a torrential stream, navigable for a short time during the flood season. Fifteen miles farther down is the mouth of the Pibor (left bank), and upon the same bank, nearly 30 miles lower, is Nasser Post. The next important place is Abwong (left bank), another 107 miles on; 71 miles farther is the American Mission Post at Doleib Hill, only 6 miles from the confluence of the river with the White Nile. The Sobat serves as the main waterway for Abyssinian trade *via* Gambela.

The *Pibor*, the chief tributary of the Sobat, rises in the swampy plains of the Mongalla province and flows northward. At Pibor Post (Fort Bruce), 182 miles from its mouth, it is joined by the *Veveno*, and at Akobo Post by its chief affluent, the *Akobo*, which rises in the Abyssinian hills, and has a length of about 200 miles. Thirty-three miles below Akobo Post, and the same distance from its junction with the Sobat, the Pibor is joined by another large affluent, the *Gillo*

(*Gila*), which also rises in the Abyssinian highlands, and has a total length of about 200 miles. Steamers have reached the Gog rapids on the Gillo, about 130 miles from its confluence with the Pibor. As the Pibor and its tributaries derive their water chiefly from the swamps, they do not begin to rise until the middle of June.

At Khartum, or more precisely opposite Omdurman, is the confluence of the White and Blue Niles. The *Blue Nile*, which rises in the mountains of Abyssinia, where it is known as the Abbai, enters the Anglo-Egyptian Sudan at Famaka, whereafter it is called by the natives the *Bahr el-Azrak* (the blue river), on account of the clearness of its waters when not in flood. Fifty-five miles below the spot at which it enters the Sudan is Roseires (right bank), where it first becomes navigable by river steamers. Between Roseires and Khartum, a distance of about 400 miles, the river has a fall of 218 ft. The next place of importance down-stream is Singa (left bank), 120 miles distant, before reaching which the river falls 97 ft. At Sennar (left bank), about 50 miles below Singa, the Khartum–Sennar railway leaves the Blue Nile to run west to Kosti on the White Nile.

Fifty-five miles below Sennar, on the right bank, is the confluence of the *Dinder*, a large tributary rising in the Abyssinian hills, which is navigable during flood time by steamers for about 130 miles, and by small boats for a much greater distance. Some thirty-seven miles lower is Wad Medani, and on the right bank, 5 miles farther down-stream, is the confluence of the Rahad, the second great affluent of the Blue Nile. The *Rahad* rises in the Abyssinian highlands west of Lake Tsana, has a total length of about 400 miles, and is navigable by small steamers during flood time over practically the whole distance. Near the confluence of the Rahad is the post of Abu Haraz, some 70 miles below which is Kamlin (left bank). Sixty-five miles farther down-stream is Khartum. Here there used to be a steam ferry, now replaced by an iron railway bridge

The Blue Nile begins to rise about the end of May, and becomes navigable about June 20, by which time its waters have become reddish-brown in colour owing to the large quantity of alluvium held in suspension.

(iii) Of the *Main Nile*, the part of the river between Khartum and the sea, the Sudanese section is about 950 miles in length.

For the first section, between Khartum and Abu Hamed, a distance of about 330 miles, the river flows in a northerly direction, passing Metemma (left bank) opposite Shendi, Meroe and its pyramids (right bank), and El Damer (right bank), formerly celebrated as a centre of learning. A little lower, 200 miles north of Khartum, is the confluence of the *Atbara*. This river rises in Abyssinia, has a course of about 100 miles before entering the Sudan, and flows 460 miles farther before joining the Nile. For 170 miles of its course, up to Goz Abu Rejeb, the Atbara is navigable in flood time, but navigation is dangerous on account of the timber which is floated down. The width of the bed at the confluence is 400 yds., and the river is there spanned by an iron bridge of the Khartum–Halfa railway.

Beyond the confluence of the Atbara the Nile passes Berber (right bank) and is interrupted by the El Bagara rapid. The river changes its direction at Abu Hamed and flows south-west to Korti, 179 miles, passing Merowe (Merawi) (left bank), which, though the headquarters of the Dongola province and the residence of the Governor, consists of about 30 houses only.

The river then turns west to Debba, 45 miles, then north past Khandak (left bank) to Dongola, 90 miles from Debba, and to Kerma, 34 miles lower, and finally north-east for 246 miles to the town of Halfa (Wadi Halfa). In this last section there are many ancient tombs and temples on both banks. The total distance from Abu Hamed to Halfa by river is 595 miles, whereas by rail or caravan across the desert it is only 232 miles. The Nile leaves the Sudan at Sarra (right

bank), 22 miles north of Halfa, whence it flows through Egypt to the sea.

The Cataracts.—The navigation of the Nile beyond Khartum is much interrupted by cataracts, of which there are six between Khartum and the sea.

The highest, which is about 52 miles below Khartum, is known as the Sixth or Shabluka Cataract. It has a fall of about 20 ft., most of which occurs in a little over one mile. 194 miles farther on the Fifth Cataract begins, a little below El Abadia, and about 30 miles below Berber; it is over 100 miles in length, and in this distance the fall is 205 ft. About 60 miles beyond the Fifth Cataract is the Fourth, which is 68 miles in length and has a fall of 160 ft. Between the Fourth Cataract and Kerma, at the commencement of the Third, is a stretch of 200 miles of navigable water, which is the main trade route of the Dongola province. The Third Cataract, which has two rapids, is over 45 miles in length, with a fall of 36 ft.; and about 70 miles farther on is the Second Cataract, 125 miles long, with four rapids, passing through the inhospitable region known as the Batn el-Haggar (Belly of Rocks), where the Nile falls 213 ft. Halfa is 6 miles below the foot of the Second Cataract. The First Cataract (214 miles from the Second) is beyond the Sudan frontier, between Assuan and Shellal, and has a fall of 16 ft. in 3 miles. The river passes over the great dam at Assuan; and, by means of a fine masonry canal with several locks, navigation is made possible at all seasons of the year from Halfa to the mouth of the Nile at Damietta, a distance of nearly 1,000 miles. During flood season the cataracts are navigable by those who know their peculiarities and dangers, but they are not much used except for local communication, the railway being preferred for traffic between Halfa and Khartum.

The Sudd Region.—No account of the Nile and its navigation would be complete without a description of the *sudd* (Arabic *sadd*, meaning a "block") and the *sudd* region, that is to say, the huge area of marsh,

swamp, and open water, probably about 35,000 square miles in extent, through which the Bahr el-Jebel (Upper Nile), Bahr el-Ghazal, Bahr el-Zeraf, and the lower reaches of their tributaries wind their way. It doubtless represents what is left of the bed of an inland sea, in which the water is now probably nowhere more than 8 ft. deep. The vegetation consists mainly of papyrus, reeds, and swamp grass (*panicum*), with occasional patches of ambach (see below, p. 126). The word *sudd* should strictly be applied only to that portion of the vegetation which is uprooted by wind and rising water, and floats on the surface with a quantity of adhesive mud. The slow movement of these vast masses of floating weed, and the way in which they burst into the channels, break up, or pile upon one another when an obstruction is encountered, recall the action of ice floes when the pack is breaking up.

In the hot, dry season, when the stems of the papyrus are from 10 to 15 ft. in height, the region is swept from end to end by fierce fires, lighted by natives, which keep down the growth of ambach and destroy any other tree which attempts to gain a footing. The ash and burnt stems are added year by year to the floating mass of roots and soil, until in course of time it becomes of a solid, peaty consistency, as much as 5 or 6 ft. in thickness.

In clearing away this *sudd* and reopening the channels, the first step is to cut or burn the whole of the vegetation growing on the surface; the line of the channel is then marked out for a distance of about 30 ft., and men set to work to cut downwards, with long saws and other implements, as far as possible through the sodden mass, along the sides of the block. A steel-wire hawser is then forced deeply into the cuts and secured by telegraph pole holdfasts. Finally, the hawser is attached to a steamer, and the whole block is pulled gradually from its place and allowed to float down-stream. The process is then repeated with a second block; and so the work proceeds laboriously,

until a fairway is cleared, which can be kept open by patrols.

Between 1863 and 1880, the *sudd* region was completely blocked to navigation on many occasions, especially on the Upper Nile, from Lake No to Shambe. After the battle of Omdurman, steamers were sent up-stream to investigate; and in 1899 a party was despatched with five gunboats, which succeeded in opening many miles of channel. The remaining 22 miles were cleared by another expedition in 1903.

Owing to the exertions and enterprise of the Sudan Government, the Nile is now one of the best natural waterways in the world. Navigation is possible throughout the year from Rejaf to Khartum, up the Bahr el-Ghazal to Meshra el-Rek, from Kereima to Kerma on the Dongola reach, and from Halfa to Shellal. From Khartum to Rejaf the chief obstacles to navigation have been overcome. A navigable channel passing through Abu Zeid ford has been marked by buoys; rocks near Jebelein have been removed; the sandbanks have been buoyed; and through the *sudd* region a way has been cut which it is not difficult to keep open, and is fairly easily navigated. In addition, wood stations for the steamers have been established by the Government at convenient points.

Steamer Transport Services.—The administration of the Sudan Government Railways controls the steamer traffic on the river. The chief services are as follows:—

(*a*) From *Khartum* to *Rejaf* there is a fortnightly service of postal steamers. The time taken is usually fourteen days up-stream and eleven days down. At Rejaf connection is made with the overland routes to the Congo, and to Uganda and East Africa. The traders in the Upper Nile region of the Belgian Congo are largely dependent upon this route.

(*b*) From *Khartum* to *Meshra el-Rek*, on the Bahr el-Ghazal, there is a monthly postal service. The total distance is 765 miles, and the time taken is eleven days up-stream and nine days down. During the wet

season, from July to September, when the road to Wau, the capital of the Bahr el-Ghazal province (107 miles), is impassable, the boats ply only as far as the mouth of the Jur, 25 miles from Meshra el-Rek, where connection is made with a service of smaller steamers, which go up the Jur to Wau.

(*c*) From *Khartum* to *Gambela*, on the Sobat, there is a steamer every month from about the end of May to the end of November. The distance is 874 miles, and the time taken is thirteen days up-stream and ten days down. A large and increasing export and import trade with Abyssinia is carried on by this route.

(*d*) On the *Blue Nile* there is a fortnightly service from mid-June to mid-September. This plies between Wad Medani, 109 miles from Khartum on the Khartum–El Obeid railway, and Roseires, 259 miles up-stream. The time taken is six days up-stream and four days down. There is also a tug service between Sennar, where the railway leaves the river, and Abu Nama, 94 miles up-stream. When cargo offers, this tug service is extended both to Roseires and Wad Medani.

(*e*) From *Kereima* to *Kerma*, a distance of some 200 miles, steamers run in connection with the branch railway from Abu Hamed to Kereima from May to October, the time taken being four and a half days up-stream and three days down. During low Nile the steamers only run as far as Dongola (170 miles), produce being shipped from Dongola to Kerma (34 miles) by native sailing craft.

(*f*) Between *Halfa* and *Shellal* (Egypt), a distance of over 200 miles, there is a bi-weekly service of fine passenger steamers throughout the year, and a bi-weekly intermediate service, calling at 21 stations.

In addition to these regular services, arrangements can be made for carrying cargo or passengers up the Atbara to Goz Abu Rejeb, a journey which takes eight days up-stream, but only twenty hours down; also to places on the Rahad and the Dinder, and on other rivers when the state of the water permits.

The fleet of vessels under control of the Government comprises 33 steamers, 17 tugs, 28 launches, 10 gunboats, and 329 barges, sailing craft, &c. There is extensive dockyard accommodation at Khartum North, which is the headquarters of the Sudan Steamers and Boats Department. The postal steamers have eight to ten cabins, and carry about 80 tons of freight. All the steamers are flat-bottomed, some of them drawing only 18 in. of water, and most of them are stern-wheelers. The first three gunboats, which formed the nucleus of the present fleet, were originally built for service in the Far East, but were sold to the Egyptian Government at the time of the Sudan Expedition. The barges are from 300 tons burden, mostly built of steel, and in many cases double-decked. Sailing boats are of two types: *gyassas* (Egyptian boats), solidly built, with high bows and free-board, lateen-rigged, and with a carrying capacity of about 50 tons, and *nuggers*, roughly but solidly built, without ribs, having a low free-board and a carrying capacity of from 10 to 25 tons. There are also a large number of privately owned sailing boats. On the White Nile goods and passengers or troops are carried in barges lashed alongside and in front of the steamers. Sometimes as many as four barges are " pushed " in the American fashion by the larger steamers, which also have double-decked passenger barges or *sandals* on either side.

Like other areas to the south, the Khartum region at certain seasons of the year, usually during the hot weather, is subject to a very violent type of sand-storm known locally as a *haboob*. These storms, which cause considerable damage by burying walls, railway tracks, &c., in sand, and sometimes capsize steamers on the broad reaches of the river south of Khartum, spring up very suddenly and are commonly followed by heavy rain.

During the early years of the occupation the ever-increasing trade of the country, and especially of the river-borne traffic, seemed to justify the formation of a private company, with the result that the Sudan

Development Company sprang into existence. This enterprise fulfilled its obligations and entirely justified its existence during the period of its activities. The construction of the new railway in 1911, through the Blue Nile province to El Obeid, however, robbed it of one of its most important assets, the gum trade of Kordofan, which naturally passed to the railway. The company was therefore wound up, and the Government took over its fleet of steamers and its workshops.

(*c*) *Railways*

The railways of the Anglo-Egyptian Sudan—amounting in the aggregate to little over 1,500 miles of track—cannot be considered extensive in comparison with the immense superficial area of the country (over 1,000,000 square miles). It must, however, be remembered that this construction has been achieved in less than twenty years, over territories which two decades ago were peopled by wild tribes and their Arab conquerors. The introduction of a novel and costly means of transport into a land which even Gordon—who knew the country and its people as well as anyone of his day—condemned as a "hopeless and useless possession," has nevertheless proved eminently successful.

Whilst Egypt had enjoyed the benefits of railway transport for many years, the Sudan up to 1880 possessed only one so-called railway line, of 3 ft. 6 in. gauge, badly built and still worse equipped, running between Wadi Halfa and Sarras, and constructed at immense cost by the Khedive Ismail. The history of the State-owned Sudan railways opens practically with the campaign of 1884-5; and construction went on with remarkable energy and success during the period covered by that of 1897-8. From such beginnings grew up the present admirable, if somewhat limited, system.

Railway construction up to the end of 1913 represented an outlay amounting to £E. 6,806,000 and an

annual expenditure upon upkeep of £E. 450,000. Revenue from all sources reached between £E. 560,000 and £E. 600,000, and profits are steadily on the increase.

There are three lines in the Sudan: the Khartum–Halfa Railway, from Khartum to Wadi Halfa, connected with the Egyptian system by means of a fleet of steamers on the Halfa–Shellal reach of the Nile; the Atbara–Port Sudan Railway, from Atbara Junction to Suakin and Port Sudan on the Red Sea; and the Khartum–Sennar–El Obeid Railway, connecting Kordofan with Khartum, *via* Sennar and the Blue Nile.

(i) The *Khartum–Halfa Railway*, after crossing the Blue Nile at Khartum, follows the right bank of the Nile through Atbara Junction (191 miles), where it crosses the Atbara river on a permanent steel-girder bridge, of seven 150-ft. spans (built in 1911), to Berber (25 miles); thence it runs to Abu Hamed (131 miles). From Abu Hamed the line cuts across the desert to meet the river again at Wadi Halfa (232 miles). This section runs through desolate and barren stretches of sun-scorched desert. The journey from Khartum to Halfa occupies about twenty-four hours; restaurant and sleeping cars are provided.

The main line was completed to Khartum North (Halfaya) in 1899. The construction of the big eight-span iron bridge which carries the line over the Blue Nile to the Khartum Central Station was not finished until 1909. An important goods station, with extensive customs stores, &c., has been built on the river bank at Khartum, close to the confluence of the two Niles and opposite Khartum North, the headquarters of the Steamers and Boats Department of the Government Railways. Its spacious quays and landing stages enable all the river-borne traffic from Omdurman and up and down river to be dealt with efficiently. The general offices and workshops of the Sudan Government Railways are at Atbara Junction.

From Abu Hamed a branch line, completed in 1905,

runs to Kereima (145 miles), in connection with a service of river steamers from Kerma and Dongola. An older military branch line, completed in 1897, from Halfa to Kerma, along the right bank of the Nile, no longer exists. From what is known as No. 6 Station in the desert, about half-way between Halfa and Abu Hamed, another short branch line, 28 miles in length, runs to Um Nabardi gold mine in the Atbai district.

(ii) The *Atbara–Port Sudan Railway*, completed in 1905, has a length of 305 miles. At Sallom Junction, 22 miles from Port Sudan, a modern harbour equipped with all the latest appliances which was opened for shipping in 1909, the railway is joined by a short line of 25 miles from Suakin, 30 miles south of Port Sudan.

The first ninety miles of the journey from Port Sudan is through the hills, and at Summit Station an altitude of 3,000 ft. is reached; thereafter the run is on a gradual down-hill grade to the Nile. The line has no gradient steeper than 1 in 100, and no curve sharper than 17½ chains radius. The journey from Port Sudan to Khartum occupies about twenty hours.

The building of a railway linking the Nile valley with the Red Sea has proved to be of enormous importance to the development of the Sudan, since it obviates a journey by rail and steamer of nearly 1,500 miles, from Khartum to the Mediterranean, involving no less than four trans-shipments of goods and passengers.

(iii) The *Khartum–Sennar–El Obeid Railway* runs along the left bank of the Blue Nile to Wad Medani (109 miles), where it connects with the Blue Nile steamer service, and thence to Sennar (59 miles). Before this section of the line was finished it was estimated that the traffic would justify the running of two, or at the most three, trains a week. This estimate, however, proved to be very much lower than the number actually required.

At Sennar the line leaves the Blue Nile and crosses the Gezira, the plain between the two Niles. At Rabak,

one mile above Kosti, and 238 miles by rail from Khartum, it crosses the White Nile by the Kosti bridge, which was built by an English firm. It then continues westward to El Obeid in Kordofan, another 192 miles, which place it reached in 1911. The construction of this portion of the line was of considerable difficulty, the country over which it passes, especially between Kosti and the terminus, being full of scrub and scattered trees.

From the first the railway was a paying concern, as the natives quickly realised the benefits which its opening conferred upon them. For years they had been content to float their produce down the Nile on flimsy rafts of reed and bamboo, and it would not have been surprising had they hesitated long before making the outlay necessary to secure transport by the new and more rapid means. Gum-arabic from the Kordofan province, to the extent of thousands of tons yearly, now reaches Khartum in a day and a half by rail, as compared with a fortnight's transport by camel, or the long camel and river journey *via* El Dueim.

The gauge of the Sudan Government railways is 3 ft. 6 in. As yet all are single tracks. English engine-drivers are employed on the expresses. There are four important bridges, viz., the Atbara, the Blue Nile, the White Nile, and the rolling-lift bridge connecting the two sides of the harbour at Port Sudan. There are few culverts and no gradients exceeding 1 in 100. Through bookings on the Egyptian as well as the Sudan railways are in operation both for passengers and goods.

Projected Railways.—The following are among the extensions contemplated or under consideration by the Sudan Government:—

(1) From Thamiam, a railway station 124 miles from Port Sudan, to Kassala, a total distance of 214 miles. This may at some future time be extended to Gedaref.

(2) From Suakin to Tokar, a distance of 56 miles, to serve the cotton districts. Tokar cotton at present has to be brought to the coast by camel transport.

(3) From Rahad, on the Khartum–El Obeid line to El Fasher, *via* El Odaiya. The distance from Rahad to El Odaiya is 171 miles, and from El Odaiya to El Fasher *via* Sharafa is 304 miles. It is impossible to prolong the line direct from El Obeid, because to the west of El Nahud and along the Darfur frontier there appears to be a belt of sand-dunes, eighty miles in width, with deep depressions and switchback slopes, known locally as *Gozland*.

A further project, for which no survey has yet been undertaken, is the extension of the El Odaiya line in a south-westerly direction along the old caravan route to Kafia-Kengi in the north-west of the Bahr el-Ghazal province. It has been discovered that the Nile–Congo watershed is suitable for a railway along its whole length. If a railway to Kafia-Kengi were constructed, and linked up with one along the Nile–Congo divide to Lake Albert, it would go far towards the completion of the Cape-to-Cairo railway route. There is little doubt that this would be the most feasible route, if not the only possible one, avoiding the *sudd* region.

Before either of these latter schemes is carried into effect it is probable that another short link in the rail-and-steamer Cape-to-Cairo transport facilities will be constructed, namely, that between Rejaf, the southern limit of steam navigation from Khartum, and Nimule, the northern limit of navigation from Lake Albert. The intervening section of the river, something less than 100 miles, and all within Sudan territory, consists of unnavigable water and the Fola rapids.

(*d*) *Posts, Telegraphs, and Telephones*

There are 118 post and telegraph offices in the Sudan. Many places on the railway or in reach of waterways are served by travelling post offices, the railways dealing with ordinary and registered

correspondence and parcels, the steamers with all branches of the postal business, as well as with telegrams at certain stations. There are telegraph offices near the railway stations at Halfa, Abu Hamed, Atbara, El Damer, Shendi, and Khartum. Letters can be posted on the trains. The mails take nine days normally between Khartum and London, and the service is twice weekly, as also is that between Khartum and Cairo, which takes four days. The mail-boat for the Bahr el-Ghazal leaves Khartum on the sixth day of each month; that for Rejaf on the sixth and the twenty-first of each month. There are monthly posts between Tembura, in the Bahr el-Ghazal province, and both the Belgian Congo and Ubanghi-Shari. The mail service in the Sudan is very efficient. Telegrams are accepted for certain places where no telegraph office exists, a special charge being made for delivery by native runner. There are about 4,777 miles of telegraph line, and nearly 10,000 miles of overhead wire, of which 676 miles are on railway poles.

Nasser and Gambela (Abyssinia), both on the Sobat river, are connected by wireless with the Sudan telegraph system at Malakal, on the White Nile. At the new military post of Kereinik, on the western frontier of Wadai–Darfur, there is a wireless installation.

With the exception of a universal system of telephones along the railway lines, the telephone service is limited to the towns of Khartum, Khartum North, Omdurman, Port Sudan, Suakin, El Obeid, Halfa, Berber, and Dongola. The provincial circuits include the provinces of Halfa, Berber, Dongola, Red Sea, and White Nile.

(2) External

(*a*) *Ports*

The chief Red Sea ports on the Sudan coast are Port Sudan and Suakin.

Port Sudan was completed and opened by the Khedive in 1909. The harbour has a good entrance two cables wide. It is protected from all winds, and

there is good anchorage in an average depth of 10 to 14 fathoms, with 5 fathoms off the permanent quays. The rise and fall of the tide is about 3 ft. Vessels can enter and leave the port at any time of day or night. There is room in the outer anchorage for several vessels: the largest vessel which has entered was of 16,909 gross tonnage. There are five quays, each 410 ft. long, and further up the harbour are two subsidiary quays, unprovided with cranes, where vessels up to 420 ft. in length can be berthed. There is also a 60-ton floating steam-crane, and a similar 15-ton crane for medium lifts.

Electric light is installed throughout, and the hauling and lifting plant worked by electricity is very complete. There are four electric coal transporters capable of dealing with 300 tons of coal per hour. The rolling bridge across the harbour is opened and closed by electricity, and the dockyard workshops are fitted with electrically-driven machinery.

All dues are charged on the Suez Canal tonnage, and pilotage is compulsory. There are large customs warehouses, a well-equipped modern hospital, and a quarantine station with disinfecting and hospital blocks. There is also a floating apparatus for disinfecting ships. Condensed water can be supplied to ships at 150 millièmes per ton on board.

Port Sudan town and harbour cost £E. 866,000 to build and equip. Practically all the imports and exports pass through it. In the first four years of its existence the external trade of the Sudan doubled in value, mainly through the use of the new Atbara–Port Sudan railway, but greatly assisted by the facilities at Port Sudan, which have made the harbour attractive to important lines of passenger and cargo steamers, which now call there regularly. In 1916 Port Sudan was entered by 286 British vessels, with an aggregate tonnage of 632,280, and 31 foreign vessels, with an aggregate tonnage of 59,619.

The old harbour of *Suakin*, which during the Expedition of 1884-5 accommodated as many as 34

vessels, has been almost entirely superseded by Port Sudan. Owing to the coral reefs on either side of the narrow entrance channel, Suakin is a difficult harbour to enter, and could never be made safe to enter at night. There are no appliances for loading and unloading. The port still carries on a small local trade.

Smaller harbours, used by sailing craft, are *Trinkitat* and *Akik* to the south of Suakin, and *Mohammed Gul* and *Haleib* to the north of Port Sudan.

(*b*) *Shipping Lines*

The principal companies calling at Port Sudan are the Khedivial Mail Steamship Co., the Austrian Lloyd, the Union-Castle Mail Steamship Co., the British India Steam Navigation Co., the Clan, Bucknall, Harrison, City, Hall, and Ellerman Lines, F. C. Strick & Co., and the Società Nazionale di Servizi Marittimi. Nearly all these maintained a service at regular intervals before the war.

(*c*) *Cable and Wireless Communications*

The Eastern Telegraph Company has a cable connecting Port Sudan with its main cable at Suakin.

There is a wireless station at Port Sudan, with a normal range of 250 nautical miles.

(*d*) *Air Routes*

There are serious difficulties in the way of the establishment of long-distance aerial routes through Tropical Africa. Practically the whole country south of the Sahara desert zone is covered with long grass, bush, or forest, in which no aeroplane, as at present constructed, could depend on landing with any degree of safety, or, having landed, could be certain of rising again. There are, moreover, soft ground and the mists of the wet season to contend against, as well as the thick dust-laden atmosphere of the *harmattan* season on the west coast, and the still thicker smoke-laden

atmosphere of the dry season, in both West and East Africa, when the bush is fired by the natives.

The Anglo-Egyptian Sudan lies, of course, on the direct overland route between Egypt and South Africa; and the British Air Ministry has discussed the possibility of inaugurating an air service to the Cape, provided with aerodromes at intervals of about 200 miles. By following alternately the Nile and the railway line, no difficulty need be experienced from Cairo to Khartum, a distance of 1,200 miles, or to Kosti, 175 miles farther south. Similarly, no difficulty arises in South Africa, along the railway from Cape Town to Broken Hill, or to Sakania, on the Rhodesia–Katanga frontier, or farther on to Elizabethville, in Katanga, 2,400 miles from the Cape. Aerodromes are already in course of construction along these two sections of the route. It is the intervening section, through Equatorial Africa, which constitutes at present the chief difficulty. The direct route would be Kosti–Malakal–Shambe–Rejaf–Koba (at the north end of Lake Albert)–Kasindi or Katwe (Lake Edward), and thence to Usumbura (Lake Tanganyika), or on to Kigoma and Abercorn. From the south end of Tanganyika the route would be south-west, across Lake Mweru, to the Lufira river and the Katanga railway, which would be followed south to Elizabethville; or the airman might make his way south-east to Lake Nyasa and thence *via* Blantyre, Beira, and Salisbury, to the Cape-to-Cairo railway at Bulawayo.

The alternatives to this direct route suggested by the Air Ministry[1] are as follows: (1) From Khartum, up the Blue Nile to Roseires, thence south, along the Abyssinian frontier, to Gambela and the western shore of Lake Rudolf; (2) from Roseires to the Sobat, thence to Gondokoro, near Rejaf; (3) from the Nile to Port Sudan, thence to Aden, and, *via* Addis Abbaba and Lake Rudolf, to the Uganda Railway; and (4) from

[1] *Geographical Journal*, Vol. LIII, No. 5, May 5, 1919.

the Uganda Railway across the Central Railway to the south end of Lake Tanganyika. None of these routes, however, appears to be feasible at the present time.

(B) INDUSTRY

(1) Labour

(*a*) *Supply; Emigration and Immigration*

According to the value of its contribution to the general prosperity of the country, the population of the Sudan may be roughly divided into three classes. The first consists of the primitive and unsophisticated natives of the southern districts, who so far have little economic value, and in most cases do not repay the cost of administration; the second includes the nomad and pastoral sections of the "Arabicized" population, who contribute, indirectly as local transporters, and directly by the sale of their animals, to the general welfare; while the third comprises the urban and agricultural population, native and foreign, to whose enterprise and labour the prosperity of the country is mainly due.

To the first class belong practically the entire population of the Bahr el-Ghazal, Mongalla, Nuba Mountains, and Upper Nile provinces, 14 per cent. of that of Darfur, and 28 per cent. of that of the White Nile province. In all, 54 per cent. of the total population of the Sudan belongs to this class.

The numbers in the second class are estimated to amount to about 10 per cent. of the total population; but, as in most Oriental countries, particularly where the population is nomad, it is difficult to obtain an accurate census. The true Arabs, of whom this class is largely composed, have never been inclined to work; from time immemorial they have been accustomed to supervise the labour of slaves; and in the Sudan of to-day, from which the slave-trade has been abolished, their energies are confined in the main to camel-breed-

ing and cattle-raising, or, as in Kordofan, to transport work.

The population composing the third class is mainly riverain, except in Darfur, from which, as it has only lately come under the Sudan administration, no accurate statistics are yet to be obtained; in Kordofan, where, except in the south, there are no rivers; in Kassala, where the inhabitants live at a distance from perennial streams; and in the Red Sea province, composed of hills and maritime plain. In all, 36 per cent. of the population of the Sudan belongs to the third class.

The average density of population in the Sudan is $3\frac{1}{2}$ per square mile, but certain provinces are more closely populated than others. *Halfa* province is practically a desert, intersected by some 250 miles of the Nile, with a narrow fringe of cultivated and irrigated land along the banks of the river. The entire cultivated area is only 31 square miles, while the population, urban and agricultural, is 90,000, or 2 per acre on the cultivated portions. The inhabitants of this province are Berberines. Many of them enter domestic service in Egypt rather than cultivate their lands or work at home. There is therefore a continual emigration, which militates against the increase of the population.

The *Dongola* province is also mainly desert, but has, like Halfa, about 250 miles of river running through it. Its climatic conditions are also similar. Its cultivated area is about 146 square miles (of which 75 per cent. is dependent on artificial irrigation, 1 per cent. on rainfall, and 24 per cent. on inundation, that is, basin irrigation), while the agricultural population works out at 1·16 per acre. The people are industrious and seldom migrate.

In *Berber* province the climatic conditions are similar to those of Dongola; it is watered by 200 miles of the Nile, and also by the Atbara. In the summer there are torrential rains, with water depressions in the desert east of the Nile, where from time immemorial

dura (millet) has been grown, and whither the population migrates *en masse* during the season to sow and reap crops grown without the drudgery and expense of working the primitive *sakia* and *shaduf* (see p. 117). Seventy-five per cent. of the population of Berber are engaged in agriculture, and the remaining 25 per cent. in camel-breeding, transport, and cattle-raising. The people seldom emigrate, but there is a certain amount of immigration of Arabs from across the Egyptian border. The cultivated area is about 130 square miles (80 per cent. artificial irrigation and 20 per cent. rainfall). The agricultural population works out at 1·17 per acre. In this and other provinces north of Khartum the foreign population is chiefly mercantile.

In the *Red Sea* province the climate is quite different from that of the Nile regions. The hills are frequently surrounded by mists and heavy clouds, which are precipitated as rains in the winter, and burst into violent storms in the summer, when the Khor Baraka becomes swollen and inundates some 50,000 acres of land at Tokar. Sixty-five per cent. of the population is employed in agriculture, and 25 per cent. of the remainder in camel-breeding, transport, or cattle- and sheep-raising. The cultivated area covers 85 square miles (8 per cent. rainfall, 92 per cent. inundation), and the agricultural population amounts to about one person per acre only. The province, therefore, is mainly dependent upon outside labour for the cultivation and picking of the cotton crop. The resident population at Tokar is about 2,000, but during the cotton season the number is increased to 10,000. Of this total, 5,000 are drawn from the population of the province, the remaining 5,000 being West Africans (Hausa, Bornuese, and Fellata) who, passing through the Sudan on their way to Mecca, seize this opportunity of obtaining the wherewithal to pay for their passage across the Red Sea, and to accomplish their pilgrimage. Piece-work being unpopular, a daily wage of from 3 to 5 piastres ($7\frac{1}{2}d.$ to $1s.$) per day is paid. The picking is done by boys and girls.

The "Arabicized" population of this province is Hamitic, not Semitic, and regards labour as less derogatory to its dignity than formerly. The well-known Hadendoa tribe ("Fuzzywuzzies") have even been employed on bridge-building work for the railway. The foreign population are engaged in seafaring and mercantile occupations, and a certain number of Arabians from the hills east of Jedda, on the Arabian coast, are employed as dock labourers. As the two chief ports are situated in this province, a certain amount of migration and movement is bound to occur. This, however, is confined to the passage of merchants and Arabs from the opposite shores of the Red Sea, and to and from Mecca.

Of the *Kassala* province, 279 square miles are under cultivation (artificial irrigation 30 per cent., rainfall 60 per cent., and inundation 10 per cent.). Eighty-one per cent. of the population is said to be available for labour (agriculture), which gives only 0·4 person per acre. Supplementary labour is, therefore, very necessary, and is drawn from the same sources of supply as in the Red Sea province, with the addition of a few Abyssinians. About half the province lies south of Khartum, and has therefore a larger acreage under rainfall crops than those provinces which lie north of the capital.

The *Khartum* province, although the smallest of the political divisions (5,000 square miles), has the relatively large cultivated area of 208 square miles—all under artificial irrigation. The population is mainly urban, but to some extent agricultural (1 per acre of cultivated land). As Khartum, the capital of the Anglo-Egyptian Sudan, and also the large towns of Omdurman and Khartum North, are situated in this province, a large foreign element is attracted to it, chiefly to engage in trade. The labour of West African settlers is available.

The provinces south of Khartum, both climatically and ethnographically, are different from those north of it. Their populations—at any rate south of 10° north

latitude—are mainly negroid. With few exceptions the rainfall is sufficient, so that cultivation entails but little labour in comparison with what is necessary in districts irrigated by artificial means.

In *Kordofan* province the area cultivated amounts to about 284 square miles—all dependent upon rainfall. Sixty-three per cent. of the population is engaged in agriculture (1·2 persons per acre). The remaining 37 per cent. is occupied in cattle-raising, camel-breeding, transport work, or gum-collecting. In *Darfur* province also all the crops depend upon rainfall.

Bordering the Khartum province, and to the south of it, are the *Blue Nile* province and the *White Nile* province. With the exception of Khartum these are the most densely populated and best cultivated provinces. The Blue Nile province depends almost wholly upon rainfall, while of the White Nile province 21 per cent. is artificially irrigated, and the rest is dependent upon rainfall. The people of the White Nile province are intelligent and by no means unfriendly. The province comprises a considerable portion of the Gezira. Cultivation up till now has been entirely dependent on the rains, or on the Nile flood, which in places has extended (e.g., in 1898 and 1906) from six to ten miles inland from the true banks of the river. At times the crops are excellent, and the people avail themselves of any opportunity to hoard their harvests, local requirements for as much as three years having been supplied by a single harvest. Cattle-raising is a standing industry among the people, but, as the land is subject to long and severe droughts, the revenue derived from this pursuit varies greatly. Horse-breeding, also, is encouraged among the Arabs, and an annual horse show has been organized.

The conditions in *Sennar* province, which borders the Blue Nile, are much the same as those in the White Nile province. Only 5 per cent. of the area of cultivation is artificially irrigated. These conditions will change when the Gezira irrigation scheme is fully developed.

The three provinces of the Blue Nile, White Nile, and Sennar are, as it were, the granary of the central Sudan, and, as the population is on the increase and the Arabs are gradually becoming adapted to agriculture, a prosperous future is in view. Moreover, these provinces benefit from their proximity to the three large towns of Khartum, Omdurman, and Khartum North.

In the provinces of *Bahr el-Ghazal*, *Mongalla*, *Nuba Mountains*, and the *Upper Nile* the inhabitants, with the exception of the more intelligent and industrious natives of the western Bahr el-Ghazal, are primitive, indolent by nature, and with few wants. As labourers for development schemes they are of little use. When communication with the outside world becomes easier, and when cloth, beads, and other European articles become more familiar to them, their wants will increase, and they will realise the necessity of working in order to obtain the means to buy the things they need. In West Africa thriving native industries have sprung up under precisely this stimulus; and an instance of much the same process is to be seen in the Lower Sudan provinces, where the Arab camel-men are obliged to work in order to obtain money to buy gold ornaments for their women. The demand is so great that native jewellers have found it difficult to maintain a sufficient supply.

With regard to the supply of native labour as a whole, there remains much to be done in its organization and development. It has had to be supplemented from outside sources. Labourers have been brought from Upper Egypt on short contracts for Government work of various kinds, and the great majority of the dock labourers employed at the Red Sea ports are Arabs from the opposite coast of the Red Sea. These men are hardworking and frugal, but show little or no inclination to settle in the Sudan. The West Africans, as already mentioned (p. 91), furnish a migratory supply of labour; several hundred families come yearly to the western districts of the Bahr el-Ghazal from over the

border, and find employment in carrying ivory for merchants. The value of a negro woman being very much higher in the northern Moslem countries than in the south, the majority of the women accompanying these parties remain in the Sudan.

(*b*) *Labour Conditions*

A labour bureau was inaugurated in 1908. Its headquarters are at Khartum, where it works in co-operation with the governors of the provinces. Reports on the working of the scheme and the registration of Sudanese labourers show that the bureau is succeeding in its main object, namely, to increase Government control over the labouring population. This is especially the case in Khartum and in other large centres of population. The report for 1914 states: "The supply of unskilled labourers during this year has been fully equal to the demand, and the services of the Labour Bureau in this respect have in consequence been little utilised. The demand for the supply of skilled labourers has exceeded that of past years, particularly in the case of private companies, several of whom have engaged the greater part of their workmen through the medium of the Bureau."

The total number of Sudanese casual labourers registered throughout the country in 1914 was 11,443, and of *mugadamin* (gangmen) 515. Twelve gangmen and 527 labourers had been registered in the course of the year. The average daily wage for these casual labourers was $3\frac{1}{2}$ to 4 piastres ($8\frac{3}{4}d.$ to $10d.$), as in previous years. A scheme to assist ex-soldiers of the Egyptian Army to obtain civil employment had been put in force, and the bureau had been successful in obtaining situations as watchmen, storekeepers, &c., for a number of ex-soldiers who were too old for manual labour.

Reports in 1914 from various provinces called attention to the fall in the rate of wages. At Kassala the rate fell as low as $2\frac{1}{2}$ piastres per day, but rose on the commencement of the rains. In the White Nile pro-

vince the highest rate of wages reached during the year was 5 piastres per day, during the period August to October inclusive, and the lowest 3½ piastres, during the period January to April. In the Maatuk district, which suffered greatly from the failure of the crops, labour could be obtained between April and August at 8 millièmes per day. In the Blue Nile province the price of labour dropped lower than it had ever done before, and in some parts actually fell to the abnormally low figure of 1½ piastres per day. It is stated that in ordinary years during the rains the price of labour generally reaches 10 piastres per day, but in 1913, although the rains were good and the demand for labour consequently great, the daily wage never exceeded 6 piastres.

Reports in 1919 stated that labour in the Sudan was growing scarce, and that wages were correspondingly increasing. According to a report from the Blue Nile province, wages in many places reached as much as 45 piastres per day. In Rufaa the small merchants closed their shops and worked as manual labourers. One good result of the shortage of Sudanese labourers has been the employment of small Arab boys throughout the province in grain cultivation.

(2) Agriculture

(*a*) *Products of Commercial Value*

In the northern provinces of the Anglo-Egyptian Sudan only the country lying close to the Nile and its tributaries is as a rule cultivated; in the rainfall zone, south of about 12° north latitude, especially in the tropical Upper Nile provinces, practically all the land could be made productive, but as yet little has been done to induce the natives to grow more than a sufficiency for their own requirements.

The principal *vegetable products* may be classified as follows: grain crops, oil and fodder crops, cotton and other fibres, gums, rubber, dates, medicinal plants and drugs, and other products.

Grain Crops.—The *large millet* (*sorghum, dura, dhurra, aish*) is the staple grain food of the Sudan and the crop grown most extensively, 61·7 per cent. of the total cultivated area being devoted to its production. Its cultivation might be increased to any extent. It is grown on irrigated holdings, rain land, and areas flooded by the annual rise of the Nile. There are many varieties of *dura*, each suited to some particular locality or conditions of soil and climate. Its albuminoid nutrient ratio is higher than that of wheat, and its fat-content is specially high, being 3·3 per cent., as against 1·2 per cent. in wheat. It is valuable as a substitute for wheat and other cereals in poultry and cattle food, a fact not sufficiently appreciated in the United Kingdom. The natives brew an intoxicating drink, in appearance rather like pea soup, from fermented *dura*. The chief market for this grain is Omdurman, during the months of April and May, when prices are usually at their highest—about £6 3*s*. to £6 10*s*. per metric ton.

A cleaning machine was erected in 1914 for experimental purposes at the Moghren Quays (Khartum) to deal with sesame and *dura*, and was in great demand early in the winter, when the export of these products was possible. There is no doubt that other machines could be utilised.

The *lesser* or *spiked millet* (*dukhn*) is the second most important grain crop of the Sudan, occupying 25 per cent. of the whole cultivated area. Cultivated chiefly as a rain crop, but also on irrigated holdings, it is the species most frequently grown in Kordofan. In 1916 over 10,000 metric tons of this cereal were exported to Arabia.

Wheat (*kamh*) occupied only 2 per cent. of the total cultivated area up to 1916, when efforts were made by the Government to increase the area under this crop both in Egypt and in the Sudan. It is grown chiefly in the Dongola province on irrigated holdings. The crop represents only 1 per cent. of the whole grain production of the Sudan, but, when the Gezira

irrigation scheme (see below, p. 120) has been carried out, it should be one of the most important rotation crops in that region. The types of wheat already grown appear to possess much the same qualities as the higher grades of Indian wheat. On the Gezira experimental station at Tayiba yields of over 50 bushels per acre have been obtained. The total yield of wheat in the Sudan in 1916 was estimated at 5,500 tons. One result of the war has been to demonstrate beyond question the value of the Sudan to Egypt as a source of food supplies. In 1917, in order to augment these, it was decided to put 20,000 acres in the northern Sudan under wheat as soon as possible by means of pump irrigation.

What little *maize* is grown is chiefly on irrigated holdings. The production for export could be increased to almost any extent. Maize is scarcely likely, however, to become popular locally, since the people are accustomed to millet flour, which requires less cooking and seems to be more easily digested.

Barley is grown to a small extent only, chiefly on irrigated land, and mainly in the Dongola province, to supply local requirements.

Oil and Fodder Crops.—Sesame (*simsim*) occupies about 5 per cent. of the cultivated area, and, as in other parts of tropical Africa, is grown chiefly as a rain crop. It gives a good return, and the small seeds yield over 50 per cent. of oil, which is used locally for cooking purposes.

Ground-nuts (*ful Sudani* or Sudan beans) are grown everywhere in the Sudan, but mainly in the tropical areas. They contain a valuable edible oil. The export is at present small.

The *castor-oil plant* (*ricinus*) can be grown almost anywhere in the Sudan, and thrives with the luxuriance of a weed. The oil is extracted by crushing and boiling, and is used by the natives for anointing the skin.

Leguminous crops succeed well in the Sudan. *Lubia*, a splendid fodder, produces a heavy crop; its beans are

used for food both for men and for animals. *Lucerne* and *bersine* thrive well. *Cow peas, lupins, chick peas,* &c., are cultivated mostly on the river banks in the northern Sudan during the low-water season.

Cotton and other Fibres.—Although *cotton* occupies only about 2 per cent. of the total area under cultivation, it is the most important product of the country from an economic point of view. Centuries ago a trade in raw cotton was carried on between the ancient kingdom of Sennar and Abyssinia. In more recent times, during the rule of the Khalifa, taxes in the Blue Nile district were paid largely in the shape of goods manufactured from locally grown cotton.

It has been said[1] of the Sudan as a whole, not merely of the Anglo-Egyptian Sudan : "Cotton has been grown by the natives as long as we have known anything about the Sudan, both in Nigeria and on the Nile. There is absolutely no reason why the Central and the Eastern Sudan should not be among the greatest cotton countries of the world."

Native-grown cotton, of which some 8,000 bales were exported from the Sudan in 1912, could not, however, compete with the scientifically cultivated product of Egypt unless the producers were supervised and instructed in the most modern methods. With this object in view, the Government has established experimental farms, and has placed under supervision the district of Tokar, where cotton has long been grown. In 1912 the Sudan Cotton Ordinance was passed. This decree regulates the importation and supply of cotton seed, through the Director of Agriculture, provides for special licences for ginning factories, and insists upon the clean picking of the cotton and the grading of the seed according to quality. It also empowers the governors of provinces to establish such regulations as may be requisite to meet special local conditions, and

[1] Kumm, *From Hausaland to Egypt*, 1910.

provides for the fencing of machinery, protection against fire in factories, notice of accidents, &c.

One great enemy of the cotton crops is the pink boll-worm, which in 1913 caused more damage than all the other cotton pests put together. It is the larva of a small moth (*Gelechia gossypiella*), which burrows into the seed, feeds upon it, and develops within it. As a preventive a regulation has been made that all premises where cotton seed is stored during the period in which the moth emerges from the chrysalis (May 1 to August 1 in Egypt) shall have wire netting or other protection over all apertures through which the moth might fly into the open.

The cotton-growing districts of the Sudan fall into four classes: areas under flood irrigation in Tokar and Kassala; the Gezira; areas north of Khartum; and areas entirely dependent on rainfall.

Areas under flood irrigation.—Tokar is situated about 56 miles south-east of Suakin. The flood water supply comes partly from the highlands of Eritrea and partly from the Kassala province. The principal river is the Khor[1] Baraka, which is in flood from about July to September, the maximum flow occurring between the middle of July and the middle of August. The extent and direction of the inundations on which the cotton crop depends for irrigation are themselves dependent on the course, at present entirely uncontrolled, of the Baraka when in flood.

Sowing takes place in August or September, so soon as the surface of the soil becomes dry enough. Picking begins at the end of December and continues until May. The average yield is about 400 lb. per feddan,[2] containing about 31·5 per cent. of lint. The quality of Tokar cotton is very good, and the colour satisfactory. Samples have been valued at $\frac{1}{4}d.$ per lb. higher than Egyptian cotton of the same grade.

The whole of the cotton crop in this district, amount-

[1] Khor = a stream which ceases to run above ground during the hot season.

[2] Feddan = 1·038 acres.

ing annually to over 8,000 tons of seed cotton, must pass (by regulation) into the Government cotton market at Tokar, where it is graded officially into four separate classes and afterwards weighed. No cotton is allowed to leave the market until it has been branded with its grade and the bales have been duly sealed. It is then sold by auction and sent by camel transport to Trinkitat harbour, where it is loaded into sailing vessels and taken to Suakin, a voyage of from one and a half to two days. There it is ginned and exported. No unginned cotton is allowed to leave the Sudan, except by land to Abyssinia and Eritrea.

Cotton-growing at Tokar could be considerably developed, at a comparatively small outlay, by adopting the following measures: (*a*) the control of the Baraka flood water in such a manner as to ensure a fixed and developed course; (*b*) the establishment of a local ginning factory; and (*c*) the construction of a railway line to Suakin. Should such a scheme be adopted, a permanent annual output of over 25,000 bales of lint might be expected.

In the *Kassala* district the conditions are similar to those in Tokar. The River Mareb, draining the highlands of Abyssinia and Eritrea, and the Khor Gash flood the country between July 7 and September 15. The annual crop is estimated at about 560 tons.

Here, too, there is the possibility of very great development. When the flood waters of the Khor Gash have been regulated, over 120,000 acres of suitable land could be put under cultivation, and the output of cotton could be raised to over 20,000 bales per annum, with the possibility of a far larger production in the future. Such developments, however, would be premature unless Kassala were linked up by railway with other centres; but that will shortly be accomplished by the projected railway of 214 miles to Thamiam, on the Atbara–Port Sudan line.

The output of cotton at Tokar during the period of nine years ending in 1916 is shown in the following table:—

Seed Cotton.				Ginned Cotton.
Season.	Yield in tons.	Price per ton.	Total value.	No. of bales.[1]
		£ s. d.	£	Bales.
1907–1908	3,981	12 9 0	49,563	7,022
1908–1909	2,343	19 10 3	45,718	4,133
1909–1910	4,361	34 10 0	150,454	7,693
1910–1911	6,912	21 19 6	151,891	12,193
1911–1912	4,982	19 2 10	95,364	8,788
1912–1913	5,077	23 7 2	118,590	8,957
1913–1914	2,936	20 15 8	61,020	5,168
1914–1915	9,035	12 15 8	115,497	15,937
1915–1916	5,692	20 11 0	116,970	10,060

[1] One bale weighs 400 lb.

The *Gezira* (Arabic for island), the district between the Blue and White Niles, is an ideal cotton-growing region. It is a flat, triangular plain, with Khartum at its apex, and the railway connecting the two Niles at its base. Its area is about 4,000,000 acres. It consists of fine alluvial soil, and, since the slope of the land from the Blue towards the White Nile is scarcely perceptible, no expenditure for levelling is involved; it would appear only to require irrigation to become one of the most fertile areas in the Sudan. A scheme for the irrigation of the Gezira is at present under consideration (see below, p. 120). Should it be realised, the annual crop of cotton from the first 500,000 acres brought into cultivation is estimated at not less than 10,000 bales of high-class Egyptian cotton, with the prospect of the production increasing to 250,000 bales within 10 or 15 years, and with further possibilities in the future. Besides this, it would be possible to grow some thousands of tons of grain and to rear large numbers of cattle and sheep. The total value of the cereal produce likely to be raised has been calculated at over £2,000,000 per annum.

The Sudan Plantations Syndicate, in co-operation with the Sudan Government and the British Cotton

Growing Association, has carried out trials on experimental farms with excellent results. It has its own farms at Barakat and Zeidab, and also works on behalf of the Government a farm at Tayiba. These farms are irrigated by water pumped from the Blue Nile, and the rotation of crops has been cotton, wheat, millet, beans, &c. In 1912 the cotton was valued by Liverpool merchants at 11½*d.* per lb., the price of "fully fair" Egyptian cotton on the same date being 10¼*d.* In 1915 the average yield of cotton at Tayiba and Barakat was over 500 lb. to the acre, and the area under cultivation exceeded 4,300 acres. The Sudan Plantations Syndicate has a ginnery and baling press at Wad Medani, turning out over 1,200 bales per annum. The company has done much to prove the suitability of the soil of the Gezira for cotton-growing and to illustrate the best methods of cultivation.

The report of the Sudan Plantations Syndicate for the year ending June 30, 1917, states that the issued share capital remained at £135,000, and the debenture capital was likewise unchanged at £57,000. The crops from the three stations handled at the ginning factories in 1916 and 1917 were as follows:—

	1916.	1917.
	Bales.	Bales.
Barakat	1,687	1 956
Tayiba	1,010	1,432
Zeidab	2,080	1,631

The prices realised were highly satisfactory. Under an agreement entered into with the British Cotton Growing Association, 2,050 bales were purchased in Tokar and sold in Great Britain. The profit and loss account for the twelve months, after deduction of all outgoings, showed a net profit of £14,838, which, added to the balance of £9,676 brought forward from the previous year, brought the total credit balance to £24,514.

Areas north of Khartum.—Along the banks of the Nile at Zeidab, Fadlab, and Darmati, in the Berber

province, the Sudan Plantations Syndicate has pumping stations and a ginnery. Here 4,000 feddans are under cotton, but, owing to the prevalence of cold nights during the cotton season and other climatic conditions, this area is not nearly so suitable as the Gezira for cotton-growing.

There are other smaller estates near Khartum, the crops from which are ginned at the Gordon College ginnery in Khartum. The College also has attached to it an experimental farm at Khartum North, with powerful floating pumps on the Nile which supply water for irrigation purposes to the farm and also to other properties.

Areas dependent on rainfall.—Rain-grown cotton is confined to the districts south of the Gezira, chiefly Renk, Mellut, and Kodok, on the White Nile, and to the southern portion of the Kassala province. Although the American species is the best for sowing, some rain-grown cotton from the Sudan is considered better in quality than "middling American." Rain-grown cotton is cultivated by natives almost exclusively, and, since the introduction of the Sudan Cotton Ordinance, it is hoped that the picking and the separation of the boll and lint may be carried out in a more satisfactory manner than formerly.

The following table shows the total export of cotton from the Anglo-Egyptian Sudan during the years 1911-16 and the proportion contributed by the Tokar district and other places :—

Year.	Total Export.	From Tokar.		From other places.	
	Bales.	Bales.	Percentage of total.	Bales.	Percentage of total.
1911	22,823	12,193	53·4	10,630	46·6
1912	15,000	8,788	58·6	6,212	41·4
1913	12,830	8,957	69·8	3,873	30·2
1914	9,435	5,168	54·8	4,267	45·2
1915	23,765	15,937	67	7,828	33
1916	16,219	10,061	62	6,158	38

There is also an export of *cotton seed*, which contains an oil used for culinary purposes, for making edible fats, and for soap-making. The export amounted in 1914 to 3,012 tons, valued at £12,509, and rose in 1915 to 8,244 tons, valued at £33,376.

Cotton-seed cake is a by-product made from the pulp and débris left after the seeds have been crushed for the extraction of the oil. Decorticated cotton-seed cake is much used in Germany for feeding cattle, but is not in general use in Great Britain. Another by-product is *cotton-seed wax*.

Many *other fibres* are grown by the natives of the Nile provinces of the Sudan as rainfall crops in districts which are extremely unlikely ever to be in demand for cotton-growing. At present these are cultivated for native use only, but some would be of considerable commercial value if grown in sufficient quantity or cultivated as regular field crops so as to yield fibre of standard length and quality for the European markets. If it were not that the "retting" and other processes of preparation have to be carried out whilst the leaf-blades are fresh, and require costly machinery, the cultivation of these plants might be encouraged to almost any extent as a native industry, the raw material being bought by the Government or by private firms at a fixed price and machined on the spot.

Bow-string *hemp* is produced from the long fleshy leaves of the *Sanseviera guineensis*, which grows wild throughout the Bahr el-Ghazal and Mongalla provinces. The wild plants, however, are so widely scattered that the fibre cannot be profitably exploited. The plant can be readily propagated, and large waste areas of sandy bushland could be planted with it at very small cost. The plants begin to yield their crop of leaves two years after planting. Samples of plantation-grown *Sanseviera* fibre from Mongalla have been valued at £30 per ton.

Indian *jute* (*Corchorus capsularis*) has been grown experimentally at Kodok, on the White Nile, with success. In June 1911 a sample of 70 lb. was valued

in London at £24 per ton, the price of the best Calcutta jute in the same year being £25 per ton. The jute plant of the Sudan is *Corchorus olitorius*, and it is commonly cultivated for its leaves, which are used as a vegetable as well as for fibre. This plant has been reported as occurring in a wild state over extensive areas in the vicinity of swamps and islands on the White Nile. It was there found growing to a height of 6 ft., and the natives were retting it for rope-making.

Hibiscus (probably *esculentus*) was also met with in the same locality under similar conditions. This plant, the cultivated *okro*, is a tall, erect shrub, attaining a height of twelve feet or over, with a single, unbranched stem. The fibre is about 5 ft. 6 in. long.

Hibiscus cannabinus (*till*), the *Deccan hemp* of commerce, grows wild, and the fibre is used by the natives for rope-making. It is a tall, weedy shrub, 9 to 14 ft. in height. This plant could be extensively grown in the Mongalla province, the natives undertaking its cultivation, while the retting could be done by Government or private enterprise. Amongst other wild species of *Hibiscus* is *Hibiscus sabalariffa* (locally *karkadé*), a tall, erect shrub yielding a good fibre known in commerce as *Rozelle hemp*.

Crotolaria striata also grows wild. It produces a good fibre of commercial length, and its cultivation offers no difficulty.

Kapok, the floss from the seed-pods of *Eriodendron anfractuosum*, so successfully exploited in the ex-German African colonies as a plantation tree, could probably be grown to any extent in the Sudan south of about 12° north latitude. The fibre is used for upholstery, for making life-belts, and for many other purposes, and the wood for making pulp.

Sisal (*Agave rigida*) has been grown successfully from plants obtained from Eritrea. Neither copious irrigation nor a very rich soil is required for its cultivation.

The *deleib* palm (*Borassus flabelliformis*) yields *palmyra*, a brush-making fibre, while its leaves, and also those of the *doum* palm (*Hyphaene thebaica*), are used for making baskets and mats.

The Dead Sea apple tree, or *ushar* bush (*Calotropis procera*), which grows wild all over the Sudan, especially in the northern and north-eastern parts, also produces fibre, which has been priced as high as £24 per ton, and is used for stuffing cushions, &c. The yarn closely resembles cotton yarn, and the wood makes the best charcoal. Strong but coarse fibre can be obtained from the stems of the *banana* plant. Attempts have been made to exploit the *papyrus* rush (*Cyperus*) which covers many acres in the *sudd* region of the Upper Nile. The stems of this plant contain fibre and pulp suitable for paper-making, while the floating peat-like mass formed by its roots, together with those of other water plants, can be used as a substitute for coal. The supply of rush is almost unlimited, and although hitherto financial and technical mismanagement has prevented the success of schemes for its exploitation (see below, p. 137), it is probable that in the end its value for paper-making, if not for fuel, will be generally recognised.

Gums.—The *sant* tree (*Acacia arabica*) flourishes over large areas in the Sudan, both wild and in plantations. It yields a valuable timber, its bark and seed-pods can be used in tanning, and the gum which exudes from its stem has long been an article of commerce. The tree requires a sandy, ferruginous, well-drained soil and a short rainy season; both these conditions prevail in the province of Kordofan, which on that account, and also owing to its railway facilities, has become the chief centre of the gum industry. Large areas of acacia forest in Kordofan still remain untouched, but the extension of the railway to El Obeid has encouraged the natives to collect gum in the western parts of the province. There is also a considerable gum trade at Gedaref, and a certain amount is collected in the Gezira.

The best gum, pale in colour and highly viscous, is known locally as *hashab geneina*, and is obtained from grey-barked trees, privately owned and grown in a plantation (*geneina*). At the beginning of the dry season, usually in December, the collector makes an incision on the under side of the principal branches of each tree of three years or more, and then tears a narrow strip of bark upwards for two or three feet. In a few days gum begins to exude, and hardens into pear-shaped lumps, which the collector knocks off after about 60 days. The exudation continues till May or June, when the rains begin. The trees remain productive for 15 to 20 years, but are at their best between the ages of 8 and 12 years.

The gum from wild *hashab* trees is known as *hashab wadi*. It exudes naturally, is rather dark in colour, and is of less value than *hashab geneina*.

An inferior gum, known locally as *talh*, is obtained from acacias with red and white bark.

All these gums are soluble in water, can be mixed to form mucilage, and belong to the type known commercially as gum arabic. Their industrial uses are numerous. The finest kinds are used in the clearing of liqueurs, the finishing of silk, and the preparation of water colours; other good grades are employed in confectionery and pharmacy, in the preparation of textiles and paper, in calico printing, and in certain dyeing processes; while the cheaper sorts are used in the manufacture of stationery, matches, and ink.

There are various other gum-producing plants in the Sudan, notably *Sterculia cinerea*, which yields an insoluble, flaky gum similar to tragacanth and known as Tartar gum. Considerable quantities could be collected if a market could be found.

Rubber is collected in considerable quantities from vines (especially *Landolphia owariensis*) growing wild in the Mongalla, Bahr el-Ghazal, and Kordofan provinces. A British company has obtained a lease of the rubber-collecting in the province of Bahr el-Ghazal. The vines are cut down and dried, and the bark is then

separated, crushed, and washed, after which the rubber is collected and blocked.

As a plantation product rubber has not hitherto been a commercial success. The Para rubber tree (*Hevea brasiliensis*) thrives and yields well in the Upper Nile provinces, but, owing to the necessity of skilled labour for tapping, the need of machinery in the collection and preparation of the rubber, and the advisability of having white supervision, Para rubber is never likely to bulk largely as an export from the Sudan. The Ceara rubber tree (*Manihot glaziovii*) has for years flourished on the Kagulu experimental farm near Yei, in the Mongalla province, west of the Nile. This tree is extremely hardy and quick growing. It has been grown successfully and inexpensively on waste land by German planters in East Africa (see Tanganyika, No. 113 of this series, p. 68), and the same procedure might well be adopted in the Sudan. In the Upper Nile provinces there are many miles of bushland suitable for this purpose, and, with judicious encouragement by the Government, together with a fixed price for the produce, irrespective of market fluctuations, the cultivation of Ceara rubber might become a very extensive and lucrative native industry. The *Manihot*, although it grows luxuriantly at Kagulu and in many parts of the Upper Sudan, is not, in the ordinary sense of the word, a plantation tree, for under no system or method of regular tapping yet discovered will it survive and continue to give a yield for more than a few years. Money spent upon it as a plantation tree is wasted.

Dates are the chief fruit of commercial value in the Anglo-Egyptian Sudan. The palms (*Phoenix dactylifera*) are extensively cultivated in the Halfa, Dongola, and Berber provinces, on holdings along the river banks, artificially irrigated and privately owned. In most of the oases in the desert a wild variety is found. The Sudan product is a dry date, the best qualities being obtained from the Sukkot district in the Halfa province. Egypt is the chief market, but there is also

a large local demand, since dried and pressed dates form one of the chief foods of the nomad Arabs in the desert. Sudan dates are not suitable for export to Europe, as Algerian, Tunisian, and other soft dates are there preferred as dessert fruit.

Medicinal Plants and Drugs.—The chief medicinal plant is *senna* (*Cassia acutifolia*), which grows wild in the northern part of the Sudan, particularly in the Berber and Halfa provinces, and is also fairly extensively cultivated. In 1914 the price per ton was £20, and in 1916 it rose to £60. The product from the cultivated plant fetches somewhat less than that obtained from the wild plant, but it still brings the cultivator as much as £40 per acre. The senna is exported in a clean state to France and England.

Henbane, *colocynth*, *datura*, and other drugs grow wild in the Sudan, and, if in demand, could be obtained in quantity. Colocynth pulp is baled before exporting.

Other Products.—Wild *coffee* of promising quality is to be found in several places in the Mongalla and Bahr el-Ghazal provinces.

Sugar-cane is grown in Berber on irrigated holdings, and its cultivation might be largely extended. At present sugar is of little importance as an export.

Tobacco was at one time extensively grown in Egypt, and had a high reputation, especially for cigarettes. The Khedivial Government, however, found it more profitable, from the point of view of revenue, to import the dried leaf and export manufactured cigarettes. Cultivation was therefore abandoned, and leaf was imported, mainly from Greece, but also to some extent from Turkey. Subsequently the cultivation of tobacco became a Turkish monopoly, and in 1890 the Khedivial Government decreed that none at all should be grown in Egypt. The Anglo-Egyptian Sudan followed suit by an agreement in 1904. The monopoly remained in force until Turkey declared war and Egypt became a British Protectorate.

During 1917, when Thessaly and Anatolia—two of the chief tobacco-growing districts—were closed to

trade, small quantities of tobacco leaf were imported into Egypt from China and Havana. Since then a certain amount of inferior Indian tobacco has been imported for mixing.

Recently (1918) negotiations have been taken up between the Egyptian Ministry of Agriculture and the Ministry of Finance with the object of selecting areas for experimental tobacco cultivation, and it is anticipated that a revival of the industry will take place both in Egypt and the Sudan. The Upper Nile provinces, by reason of their fertility, climate, and the absence of frost—which is particularly injurious to the tobacco plant—should be specially suited for growing tobacco. Practically all the negroid tribes raise their own tobacco, and the plant may be seen on the outskirts of every village.

By a decree of January 24, 1914, import duties became leviable on tobacco, of whatever origin, brought into the Sudan.

The importance of the tobacco industry to Egypt, and its probable value to the Sudan, if it were revived and encouraged, may be estimated from the figures showing the revenues derived by the Egyptian Government from the import of tobacco leaf and the export of cigarettes. In 1898 the tobacco revenues amounted to £E.1,081,000. The export of cigarettes, chiefly to Germany, the best customer at that date, and to Great Britain, reached over £200,000,000 sterling in 1897, and in 1898 Cairo exporters alone attained the same figure.

Vegetable ivory is obtained from the kernel of the fruit of the *doum* or *dum* palm (*Hyphaene thebaica*). The nuts are collected in large quantities, and the ivory is used for the manufacture of cheap buttons and other small articles. There is much waste in the manufacturing process, and, to make the most of the possibilities offered by this trade, it will be necessary to import suitable machinery.

Live-stock and Animal Products.—A great part of the Sudan is a pastoral country, and the main occupa-

tion of its people, both Arab and negroid, is the raising of cattle, sheep, and goats. Of late years much has been done by the Government to gain the confidence of the chief negroid cattle-owning tribes in order to carry out measures for controlling the movement of cattle and stamping out animal diseases. Already the native welcomes the veterinary inspector, and is learning to doctor his cattle himself. His reluctance to sell is also being gradually overcome as he realises the use of money. The improvement of stock by breeding and the export of chilled and frozen carcases to Europe are questions only of time and capital.

For the present, the Egyptian market provides a good opening for trade, and live-stock (pre-eminently sheep) forms one of the principal exports from the Sudan to Egypt. Over 20,000 cattle were sent thither, *via* Halfa and the Nile, in 1915, and more than 87,000 sheep and goats. The total number of cattle exported between January and October 1918 amounted to 31,782 head, and of sheep to 151,712 head, as compared with 18,518 head of cattle and 101,597 head of sheep during the corresponding period in 1917. In the province of Berber alone between 17,000 and 18,000 sheep are exported monthly from El Damer, the centre of the trade.

In the Bayuda desert immense flocks of sheep and goats are owned by the Hassania and other wandering Bedawi tribes. The Shilluk are considerable sheep-owners, but they seldom kill for meat. The natives purchase their wives with both sheep and cows, the latter especially being sought after. In Darfur the sheep carry little wool, but among the Zaghawa there is a species with long and curly hair, and the late Sultan, Ali Dinar, had large flocks of sheep of this description. The tribes of Kordofan are rich in the possession of sheep. In the south of this province there is a small, active breed which carries more meat in proportion to its size than the ordinary Arab breeds. Even the meanest of the village Arabs own small flocks of sheep and goats, as well as donkeys and some cattle.

Among tribes of the Bahr el-Ghazal, as also among the Dinka of Bor (Mongalla), a wife costs from 40 to 50 iron hoes or 20 to 30 sheep and goats. The Nuer own considerable numbers of beasts, which, like various other tribes, they rarely kill for meat; but they are too much afraid of their thieving neighbours in Abyssinia to make much parade of their possessions. The Selim Baggara tribes keep large numbers of sheep, but few cattle. The Dinka of the White Nile are similar in this respect, and pay their herd tax partly in kind and partly in money. The tribes of the Khor Gash, in Kassala, inhabiting a district which lies at an elevation of 1,735 feet, keep great herds of sheep and horned cattle, which they water every alternate day at the wells. The Atbai (Berber province) is regarded as one of the best grazing grounds in the Sudan, not only for sheep and goats, but also for camels.

On the White Nile, at Renk, the inhabitants own many sheep and goats, and at Shawal, Abu Lahm, and Aba Island the pasturage is said to be very rich. Round Omdurman large flocks of cattle and sheep wander at will among the rich grasses which cover the mud flats and islands as the river falls. There is little doubt that the live-stock industry of the Anglo-Egyptian Sudan is one of great potential importance, not only for the people, but for Government revenues.

Dependent upon the live-stock industry are the export of *hides* and *skins*, and the manufacture of native *leather*. Goat and sheep skins are chiefly used in the latter industry, the principal tanning materials employed being *sant* bark and pods (*Acacia arabica*), *mudus* bark (*Parkia filicoidea*), and *abu surug* bark (*Prosopis oblonga*). There is a considerable export of untanned hides and skins, principally to Great Britain and Egypt. Among these figure a certain number of camel skins.

The export of *wool* from the Sudan is insignificant, the sheep being for the most part of the species without wool. Some experiments in the breeding of sheep for wool are in progress by the Veterinary Department.

Even in Egypt so little attention is given to breed that the process of shearing scarcely pays, and the wool is scraped from the fresh-cured skin. Wool from the neighbourhood of the Red Sea coast is much coarser than that from other parts, and is mainly utilised for carpet-making and for army blankets.

There are many large *wild animals* in the Sudan, and an appreciable part of the revenue is derived from licences to kill big game.

The sale and export of *rhinoceros horns* have been prohibited since 1916. The black rhinoceros was found as far north as the Gash in 1880; a few still remain on the Setit, Rahad, Dinder, and Blue Nile; on the Bahr el-Jebel and Bahr el-Arab, and in the Bahr el-Ghazal province they are less scarce. The white rhinoceros is still to be found in considerable numbers in the western Bahr el-Ghazal, chiefly along the Nile–Congo divide. The destruction of the latter species is prohibited, but many are speared by the natives.

Ivory has always occupied an important position among Sudan products. It comes chiefly from the Upper Nile provinces, but there is also a large transit trade. The elephant is found on the Setit, from which river during the rainy season it ranges as far north as the Gash; also on the Upper Atbara, the Rahad, the Dinder, and the Blue Nile. It ranges across the Gezira in small numbers, and becomes more plentiful again along the Upper Sobat, the Pibor, and the Bahr el-Jebel, in the Bahr el-Ghazal province, and along the Bahr el-Arab as far north as Kalaka. The ivory from these southern swamp and grass districts is much larger than that of the Blue Nile and Abyssinian frontier—the tusks scaling up to 150 lb. or more—but it is softer, and for this and other reasons is of slightly less value. No organised effort to capture and train adult African elephants has been made, and attempts to rear the young on cows' or goats' milk or farinaceous substitutes have generally failed. The export of immature and cow ivory is forbidden. Hippopotamus teeth also figure among the ivory exports.

Ostrich Feathers have hitherto formed one of the staple products of the country. Practically all the export is obtained from wild birds. The chief market for the feathers is at El Nahud, in Kordofan, and the best qualities are said to come from the northern parts of that province. No great advance is likely to be made in the feather trade until circumstances favour the establishment of breeding farms. A successful experimental farm has been carried on by the Government for some years at Khartum.

Beeswax is collected by the natives and sold in a crude state to European and other traders, who clarify and strain before exporting it. Most of that exported from the Sudan comes from Abyssinia, *via* Gambela, and the eastern districts of the Sudan. In the drier ironstone districts of the Bahr el-Ghazal, towards the Nile-Congo watershed, unlimited quantities of honey and beeswax could also be collected, for here, as in other bush-covered countries annually subject to grass fires, almost every tree has some hollow or hole in it of which the bees take advantage. Every tenth tree would seem to have honey bees in it, or a nest of the little "eyefly" bee, which, though the smallest species in the world, seems to produce almost as much wax as the honey bee. The market value of Sudan beeswax is about £10 per cwt.

(*b*) *Methods of Cultivation*

Native Methods.—Methods of cultivation, especially in the Upper Sudan, are still primitive. The chief agricultural implement is the hoe, the type most generally in use being the long-handled push hoe, with a half-moon blade. Seeds are sown in holes dibbled into the soil with a curved and pointed stick, which is long enough to enable the operator to carry on his work without suffering from the fatigue of a bent back. Various small knives are used for harvesting the *dura*,

which, when cut, is carried to a threshing floor in the fields and beaten out by women or trodden out by cattle, the stalks being kept for fodder during the dry season. On irrigated holdings the value of manure is not overlooked. Primitive ploughs or harrows are in use in some districts. In spite of attempts on the part of the Government and private enterprise to introduce more up-to-date mechanical and labour-saving devices, little advance has been made in this direction. Probably in no country in the world is the cultivator more conservative and less willing to adopt modifications in his antiquated methods.

The native, however, thoroughly understands irrigation, and has learnt by centuries of practice to be very exact in levelling operations, the making of channels, and the training of water upon the irrigated patch. Even here, however, he has much to learn as to the use of labour-saving devices (see below, p. 117).

The Locust Pest.—A serious difficulty with which the Sudan farmer has to contend is the annual appearance of swarms of locusts, sweeping the country over which they pass bare of vegetation. It is the mature insect, in the flying stage, which does the greatest damage to crops, for at the larval or "hopper" stage the locust prefers to feed on the leaves of bushes. When the bushes are entirely covered, however, the rest of the hoppers cluster round the *dura* stalks and do considerable damage. The horde of hoppers travels at regular times, usually from 7.30 a.m. to 10 a.m. and from 3.30 p.m. till sunset. The course of advance is always with the wind, and if the wind changes during the siesta period the march is resumed in a new direction.

This regularity of movement makes it easier to attack the pest in the hopper stage than later. The Government has taken active measures to abate the nuisance, and the services of the officers of the Entomological Section of the Education Department at Khartum are always at the disposal of local authorities. As soon as the hatching of a swarm is reported, officials are sent to place food impregnated with poison across the path

likely to be taken. The number of separate swarms is so large, however, and simultaneous reports are made from so many different districts of a province, that it is hard work to secure general destruction of the pest. Moreover, the local natives are slow in coming to the assistance of the locust officers.

Irrigation.—Almost the only water-lifting devices used by the natives are the ancient bullock *sakia* or Persian wheel, built entirely of wood, with an endless chain of earthen pots; and the *shaduf*, with a long weighted lever worked by manual labour, and a goat skin, hauled up and down by donkey or mule. Iron *sakias*, which can be worked by a single animal and give a double output of water, have failed to become established, owing to lack of mechanical knowledge and suitable materials for repair. Iron bearings for the old wooden *sakias*, giving freer movement and therefore greater output, have fared little better, for the absence of the groaning noise made by the wooden bearings prevented the owner at a distance from knowing whether the *sakia* was working or not. The amount of water that can be raised to any height by either the *sakia* or the *shaduf* is inconsiderable, and the area commanded is small. Irrigation by such means is restricted to a comparatively narrow strip of land along the river bank, and the average native holding worked in this way extends to about ten acres only.

From the point of view of irrigation the Sudan may be divided into four zones—the northern, the Gezira, the southern, and the Red Sea and Kassala zones. The first two are practically dependent upon artificial irrigation, the third relies upon rainfall, and the last depends upon natural inundations.

The *northern zone* comprises Khartum and the provinces north of it. Here artificial irrigation is carried on along the river banks by means of two systems: either by canal irrigation, which necessitates the lifting of water from the river during the whole period of the growth of the crops, or by basin irrigation, by means of which certain blocks of land, having a surface level

lower than that reached by the river in its annual rise, receive in one heavy flooding sufficient moisture to mature a grain crop. Where canal irrigation is carried out the date palm is prominent, and most native holdings have a considerable number of trees, from which excellent returns are obtained, and beneath which grain and fodder crops and vegetables are grown. Basin irrigation on anything like a large scale is confined to the Dongola province. Here wheat is the principal crop, but some barley and green fodder are also cultivated.

The *Gezira zone* comprises the great plain between the White and Blue Niles, consisting of alluvial deposit ("cotton soil") instead of the dry sand so universally encountered in the country north of Khartum. In making this region productive nature would appear to have accomplished one-half of man's work for him by levelling millions of acres which, in the near future, when, by man's ingenuity and labour, water for irrigation purposes is forthcoming, will become white with cotton. It is in connection with this locality that the Government are maturing irrigation schemes upon which great hopes are based. The Gezira, in fact, admittedly holds out as fine prospects for cotton growing as any locality within the British Empire (see also p. 102).

The *southern zone* comprises that portion of the Sudan south of about 12° north latitude, where approximately North African and Saharan conditions give place to a region of abundant rains, upon which all agricultural effort depends. Variations in the amount and distribution of the rainfall being very considerable from year to year, the cultivator of the soil has little sense of security, and consequently small encouragement to adopt intensive methods of farming. Nevertheless, owing to the almost universal fertility of the soil, surprisingly rich crops are obtained.

In the *Red Sea and Kassala zone* irrigation depends upon the overflow of the Khor Baraka when in flood. This river, rising in the highlands of Eritrea, comes

down in July–September as a torrential stream, irrigating during a normal season 50,000 acres of cotton-growing lands at Tokar. The area under cultivation, however, depends entirely upon the extent and direction of the overflow, which is very variable. In 1912 the area flooded was 44,000 acres, as against 54,000 in 1911, the highest on record. Occasionally the river has broken away to the east, and the flood water has been lost on rough ground far outside the area allotted by the Government for cotton cultivation, with the result that the crop has been a failure. Attempts on a small scale to divert the flood into certain courses have been fairly successful; but, until the Khor Baraka is scientifically controlled (see p. 100), no great improvement can take place. The native in this district is anxious to use European ploughs and modern methods of cultivation, but it is not difficult to understand his aversion to any expenditure that would be fruitless should the flood water not irrigate his land.

The Khor Gash and the River Mareb are usually in flood between July 7 and September 15, and the conditions in Kassala as regards the uncertainty of the overflow are similar to those in Tokar. Engineering works are contemplated from which much improvement is expected.

Projected Irrigation Schemes.—The Anglo-Egyptian Sudan has witnessed the consummation of a number of engineering triumphs in connection with the conservation of water supplies since the country was released from a reign of terror less than twenty years ago and reopened to the world under British rule. There are now under consideration additional irrigation, storage, and reclamation schemes, having for their object either the provision of an abundant water supply to non-irrigated districts, by means of a masonry storage dam, or the reclamation of wide areas of land which at present are more or less useless. The most important of these are a scheme for the irrigation of the Gezira plain by means of the Blue Nile; a project for impound-

ing the waters of the White Nile for the benefit of Egypt; a scheme for a Bor-Sobat canal to avoid the waste of water in the *sudd* region; works to control the flood waters of the Khor Gash and the Khor Baraka; and the development of irrigation in the Dongola province.

The *Blue Nile irrigation scheme* is by far the most important, and has been under consideration in one form or another for nearly twenty years. The undertaking has for its object the irrigation of the great Gezira plain by means of a dam to be constructed on the Blue Nile and a main supply canal through the Gezira.

The dam is to be built at Makwa, a few miles south of Sennar, while the canal will take off above the dam and is intended for the irrigation of an initial 300,000 acres. The dam has to pass a discharge of 53,000 cubic ft. per second in a river whose serrated gauge diagram shows that it is subject to great and sudden fluctuations; and, in order to supply the feed canals, a head of water of 52 ft. is required. For the dam to be of sufficient strength to support the strain of such a head it is essential that it should be based upon rock; the Makwa site, 180 miles from Khartum, fulfils this requirement, and is the nearest suitable spot available.

The main canal (in connection with which a considerable part of the initial digging has been finished) will lead to a point at which the water will be delivered to about 300,000 acres. One part of this area may lie fallow every year, and one be put under green crops, leaving not less than 100,000 acres for cotton. Since cotton grows well as a winter crop in the Sudan, winter water only is required for its cultivation; so that it is possible to obtain a sufficient local supply without detriment to the irrigation requirements of Egypt.

The revised estimate of the cost of the dam amounts to £E. 1,750,000; but, in view of the rise in the price of

materials and the increased cost of labour, further consideration will be necessary to estimate the actual cost under existing circumstances. The cost of the main canal, to supply sufficient water for the irrigation of 300,000 acres or more, would be considerably above £E. 580,000.

The *White Nile scheme* is intended to control the waters of that river for the benefit of Egypt. It comprises a reservoir dam and a spill-water channel, the former being of the more immediate importance.

The dam, which would be built at Jebel el-Auli, would be capable of holding up an adequate summer supply for Egypt, and, if raised to a sufficient height, could impound, when necessary, excessive flood waters, for subsequent release into the main channel of the Nile. The reservoir thus formed would coincide with the White Nile valley behind the dam for at least as far up the river as Renk. Under normal conditions this section of the river already acts in each flood season as a reservoir for a distance of about 250 miles above Khartum. The flood in the Blue Nile comes down from the Abyssinian mountains early in the summer and, owing to the steep gradient of the river-bed, has such a force that, when it meets the more sluggish White Nile, it actually dams back the latter, and monopolises the channel below Khartum for some distance. Then, as the Blue Nile begins to fall, the pent-up flood of the White Nile breaks in and often produces a kind of second flood in Egypt. This impounding of the waters of the White Nile when the Blue Nile is in flood is shown by the discharges of the former river at El Dueim. During May and June the discharges at El Dueim and at Taufikia are about equal. As the Blue Nile rises the discharge at El Dueim first remains stationary, whilst the river continues to rise, and then in August diminishes as the Blue Nile flood strengthens. In October the discharge increases rapidly as the flood effect of the Blue Nile passes.

The design of the White Nile dam is described as being comparatively simple. The maximum head of water required is 11 yds., and no complications are anticipated regarding waterways or sluices. The cost has been estimated at about £E. 1,500,000, though, in view of the recent great increase in the price of labour, this cannot be regarded as final.

The spill-water channel would run through the central portions of the Gezira, from the Blue Nile above the Makwa (Sennar) dam, in order to conduct excessive flood water to the White Nile valley reservoir, which it would enter some way above the Jebel el-Auli dam. Its construction might be postponed until the completion of the Makwa dam makes it possible to excavate by dredging.

The *Bor-Sobat canal project*.—The volume of water in the White Nile, at least above the confluence of the Sobat, remains fairly constant at all seasons and under all conditions, no matter what the rainfall in the Upper Nile region and along the Nile-Congo watershed may be. It would be much larger if the supply from the Bahr el-Ghazal, with its many large tributaries, and from the Upper Nile were not wasted by evaporation and absorption in the *sudd* region (see above, p. 75), which acts as a natural reservoir. It has been computed that, at the point at which the river leaves this region, the volume of water is 50 to 80 per cent. less than that at the point of entrance. The discharge at Mongalla is estimated at from 20,000 to 70,000 cubic ft. per second, whereas, at the point at which the river enters Lake No, it is said to be only about 9,000 to 10,000 cubic ft. per second.

A possible remedy for this would be the cutting of a channel due north from Bor to near the mouth of the Sobat large enough to carry the entire summer discharge of the Upper Nile. Such a channel would practically be a straight canal, about 210 miles in length, and would reduce the distance for steamer transport between its two extreme points by more than one-half. This great work has been for some time past

under detailed consideration, and, if it were carried out, it is probable that over 1,000,000 acres of the Sudan in the *sudd* region could ultimately be reclaimed for cultivation. The originator of the scheme[1] proposed to utilize the material excavated from the canal as an embankment for a railway, which would serve as a link in the Cape-to-Cairo line. In recent years, however, the main channel of the Upper Nile from Shambe to Lake No has been cleared of *sudd*. The enormous expense of cutting the proposed canal would therefore appear to be unjustifiable, unless there were some danger of the waterway becoming again unnavigable.

An alternative, apparently, is the regulation of the main river-channel passing through the swamp region; but, even if this could be effectively accomplished, the results would be more uncertain than those of the canal. Regulation of the river above the *sudd* region could be secured by building a small dam at the outflow from Lake Albert, which then would have enormous capacity as a storage reservoir. It is realised that, if the Bor-Sobat canal were constructed, the control of the flood water in the White Nile would be difficult unless the Lake Albert dam were also constructed.

On the *Khor Gash* and *Khor Baraka* flood water control works have been already begun in conjunction with the Kassala and Red Sea railway extension; £E. 300,000 having been allowed for the control works in addition to the sum allotted for the construction of the railway.

For the development of basin irrigation in the *Dongola province* it is proposed to continue the conversion of the remaining basin lands into perennial irrigation lands, either by building a barrage or by extending the right to pump water from the Nile, a right which hitherto has been retained exclusively by the Egyptian Government in order to safeguard the water supply of Lower Egypt.

[1] Sir William Willcocks, K.C.M.G

The Irrigation Service of the Egyptian Public Works Ministry exercises control over all matters concerning irrigation in both Egypt and the Egyptian Sudan. For convenience of administration the Sudan has been divided into four inspectorates. These are the Blue Nile division, in which are the Makwa dam and the Gezira canalisation; the White Nile and Upper Nile division, which includes the White Nile dam and all dredging and draining works in the *sudd* district; the Main Nile division, to which, among other works, belongs the development of the basins in the Dongola province; and the Kassala and Tokar division, which includes the areas commanded by the Khor Gash and Khor Baraka. The permanent staff comprises a director-general, and, in addition to an inspector, each division has either a director of works or from two to four assistant directors. Temporary staffs are engaged as required.

(*c*) *Forestry*

The Anglo-Egyptian Sudan contains no real forest, that is, no moisture-conserving rain-forest comparable with the evergreen timber forests of western and central Equatorial Africa. There are, however, strips of "gallery-forest" in valleys and *khors* in some of the upland districts on the east and south, towards the Abyssinian highlands, and also along the Nile-Congo watershed.

The Sudan regional area, including the Anglo-Egyptian Sudan, is botanically the bush region lying between the virgin forests of the Congo and the West African coast to the south, and the Sahara desert zone to the north. Along many of the rivers there are large trees or gallery-forest; on the ironstone plateau open bush and here and there areas of bamboo; in the low-lying parts papyrus swamps; in the Bauchi hill country and in Adamawa open grassland, and round Lake Chad, in Wadai, Darfur, and Kordofan, thin bush, scrub-covered country, and acacia bush. "Bush"

is grass country with trees and bushes scattered more or less thickly over it. Bush vegetation is of a much drier type than that found in evergreen forest, and very few of the species to be found in the one are represented in the other; it is, in fact, the halfway stage between forest and desert. What is often spoken of as "forest" in the Sudan is really bush in which the trees are larger and more numerous than elsewhere, as, for example, at some places along the banks of the White Nile and in the Bahr el-Ghazal. The nearest approach to a timber supply is probably in the western Bahr el-Ghazal region.

In about the latitude of Khartum, as the traveller proceeds southwards, acacia thorn trees begin to take the place of camel thorn and low desert scrub, increasing generally in number and size to about 10° north latitude. These trees cover immense areas of country in Darfur, Kordofan, Sennar, Kassala, and the Red Sea provinces, and also fringe certain parts of the Nile; and where the word "forest" is used it frequently refers to these gum-tree districts. A forest ordinance was enacted in 1912 which dealt largely with the cutting down of *hashab* (gum) trees in areas which had formerly been cultivated and to which the natives wished to return. Grass fires, started by the natives for purposes of hunting, for facilitating communications, or for grazing purposes after the rains begin, frequently do great damage to the gum forests of Kordofan and Kassala, and in the Sennar reserves; but these are now dealt with more promptly than formerly and the destruction caused by them has been much reduced. The staff employed on the important work of conserving the forests in Kordofan consists of two inspectors, seven forest rangers, and thirty forest guards, all mounted.

In southern Kordofan, as in many areas farther south, the *baobab* tree (*Adansonia digitata*) is a common feature of the landscape. Attention has recently been called to the value of baobab fibre for paper-making, in the preparation of explosives, for

making twine and rope, and as a substitute for cotton and silk. A concession has recently been granted to a company in Portuguese East Africa for the exploitation of this tree; and it may well be that in course of time an industry may be developed in the Sudan.

In the Dar Hamar and Dar Homr districts, where wells are few and far between, the inhabitants depend for their water supply in the dry season upon their *tebeldi* tree water-tanks. These huge stemmed trees are very liable to become hollow, and can easily be scooped out and filled with water. Some are even self-filling during the rains and the water stored in them remains sweet throughout the hot weather. The *tebeldi* trees are a highly prized form of private property, which is either rented or bought, and their possession often occasions bitter disputes. The populations on the Dar Hamar caravan route make a living by selling to travellers water stored in this way.

In the *sudd* region (see p. 75), practically no trees exist, except the ambach (*Herminiera elaphroxylon*), which reaches a height of from 10 to 15 ft. It usually grows in several feet of water and forms dense thickets of spiny branches and tangled stems, the latter being sometimes 3 ft. in diameter. The wood when old is very light and corky. The sticks and poles, though light, are fairly durable, and are used by the inhabitants for building and for making rafts, canoes, &c.

The dry ironstone lands of the south-west, sloping upwards from the swamp regions to a height of 2,000 to 3,000 ft. at the Nile–Congo watershed, are covered with heavy bush, the trees in which become finer and more numerous towards the divide. The best of this country extends along the watershed, throughout the whole length of the Bahr el-Ghazal province, and contains an almost inexhaustible supply of African mahogany (*Khaya senegalensis*) and other timber trees, of which the commonest are the *lulu* or shea-butter tree (*Butyrospermum*)—the fruit which produces the

butter being known as the "Sudan date," the *abu surug* (*Prosopis oblonga*), *mudus* (*Parkia filicoidea*), *higlik* (*Balanites aegyptiaca*), *ardeib* (*Tamarindus*), balsams, large acacias, and other bush species. The mahogany tree is to be found in both forest and bush. Most of this ironstone region of the western Bahr el-Ghazal is extremely fertile, especially that near the divide, which in places is thickly populated with natives of above the average level of intelligence, physique, and industry. If a railway were constructed the district would probably become prosperous and important.

The White Nile forests consist mainly of belts lining the banks of the river and its tributaries, and are composed chiefly of *sant* and, in a lesser degree, of other species of acacia. From Goz Abu Guma to Lake No the forest is composed chiefly of *higlik* (*Balanites*), *siddir* (*Zizyphus*), *dabkar* (*Crataeva religiosa*), and acacia of various kinds.

The Blue Nile forests, north of 12° north latitude, have a composition similar to those of the White Nile province. To the south, however, a change occurs, the most abundant trees being *silag* (*Anogeissus leiocarpus*) and the Sudan ebony (*Dalbergia melanoxylon*). *Suba* (*Combretum*), *leyun* (*Odina*), *homeid* (*Scleroarpa*), *inderab* (*Cordia crenata*) also occur, together with species of acacia. *Talh* (*Acacia seyal*) occupies large areas inland from both banks.

Along the whole length of the Upper and White Niles the necessity of obtaining wood-fuel for the steamers has resulted in considerable depletion in those areas where the bush approaches the river banks, but very little of the wood used for this purpose could have been put to other uses.

In the *sudd* region there is no fuel of any sort to be obtained, and it has occasionally happened that steamers imprisoned there for a length of time have been obliged to burn their deck fittings in order to avoid starvation. There is a long stretch between Attar wood-station, near the mouth of the Bahr el-Zeraf, and Kanisa (about 400 miles), through

which it is necessary for steamers to carry a large amount of firewood.

(*d*) *Land Tenure*

Under the Egyptian Government titles to land in the Sudan were in a state of confusion, which during the Dervish regime became greatly intensified. Of their own free will or under the orders of the Khalifa, many cultivators left their homes. Their holdings were either deserted or taken up by others; and when, on the country being freed from oppression, the original owners began to return, boundaries had become obscured and disputes were inevitable. The Mohammedan law of inheritance, by which properties are subject to subdivision among the frequently numerous offspring of the patriarch, was an additional cause of complication.

Since the British occupation, the Legal Department of the Sudan Government, by means of a land settlement ordinance providing for registration and cadastral surveys, has done much to substitute order for confusion. All disputes are now settled on the spot. Titles to land are registered, and practically no land can be bought until it has been registered and surveyed. One of the objects of the ordinance is to provide an equitable basis of taxation for such land as is taxable. All waste lands are claimed as Government property, unless the contrary can be proved.

(3) Fisheries

There is a considerable native fishing industry carried on at Port Sudan and Suakin. The oil sardine (*Sardinella longiceps*), which is tinned for food and used in India as a source of oil, as well as other species of *sardinella*, occurs in the Red Sea; and there are other kinds of small fish which collectively are termed sardines. These form the food of the larger surface-feeding fish such as the *bayado*, the

sirroe and the *barracouta*, which are most in request for the market, and run to 40 lb. in weight. There are many clupeid (herring-like) fish in the harbour of Port Sudan, and outside, which also are marketable; the best known of these is *Harengula punctata*.

Salted fish is a recognised article of commerce; 216 tons were exported to Egypt in 1914, and 296 tons in 1915. The export includes salted freshwater fish from the White Nile near Khartum. The chief demand for salted fish is from the Egyptian Copts.

The Red Sea *pearl-shell* fishery is of long standing. In former times, pearls only were fished for, but the indiscriminate way in which the oysters were collected ruined the industry. The present fishery is on a small scale, and concerned in the main with pearl-shell (mother-of-pearl) only, though a few pearls are still found. The Sudan pearl-oyster (*Meleagrina margaritifera*) is a species allied to, but distinct from, the more famous Ceylon pearl-oyster (*M. vulgaris*). Unlike the latter, the Red Sea oyster is a solitary species, individuals occurring singly or in small groups over the pearling grounds—a fact to be taken into account in any attempt to establish an industry of commercial importance.

The present industry is carried on chiefly between Suakin and Jibuti. The shells are obtained in comparatively shallow water by native divers unprovided with apparatus. The market price is about £80 per metric ton. Oyster-breeding begins in April and attains its maximum in May or June. The trade movement of oyster shells in Sudan ports is about 200 tons per annum, which no doubt could be largely increased should a demand arise.

A biological investigation into the marine resources of the Sudan Red Sea littoral was undertaken by the Khedivial Government in 1904. Among the practical results of this work were the prohibition of the collection of shells less than 12 cm. ($4\frac{3}{4}$ in.) in diameter; the establishment of breeding grounds for increasing the number of oysters; and proposals for the cultiva-

tion of mother-of-pearl "seed" oysters as an article of food. The Ceylon pearl-oyster is found in the Red Sea, and young specimens are eaten at Suez as a substitute for the true edible oyster, which occurs in certain areas, but is difficult to collect on account of its solitary habits. Experiments have been made with a view to increasing the size and number of these oysters. Observations on the habits of certain shell-destroying fishes were also made.

Among other shells of commercial value found in the Red Sea are those of a fish with six fin-like projections (*Pteroceras lambis*), which sells for about £E. 12 per ton; the pegtop shell (*Trochus*), £E. 15 per ton; a large kind of clam shell (*Tridacua*), £E. 10 per ton; and many species of cowrie or porcelain shells (*Cypreae*), £E. 14 per ton.

Sponges are found off Khor Dongonab, on the reefs near Suakin, and in other parts of the Red Sea. Biological conditions are reported as favourable, but the quality of the sponges is not considered so good in the markets as that of sponges from the Mediterranean.

Several species of sea cucumber, used in the preparation of *bêche-de-mer* (trepang), a favourite article of diet among Chinese and other Eastern peoples, are to be found in the Red Sea, but there is no export from the Sudan. Black coral (*yusur*), used for ornamental purposes, is fished for. Edible and shell turtles occur in small numbers.

(4) Minerals

In general, the surface of the Anglo-Egyptian Sudan north of 12° north latitude consists of old sedimentary sandstones and clays overlying a bed of older crystallines, which are an extension of the underlying rocks of the Abyssinian plateau. These crystalline rocks—chiefly granite, gneiss, and schists—appear on the surface in many places, especially on the east and south frontiers, and in Kordofan. They form the backbone of the principal mountain ranges and outcrop

as isolated rocks and boulders chiefly in the plains of Sennar and Darfur. In Sennar, red granite predominates, mixed with greenstone and mica-schist; in the Nuba Mountains, Darfur, and Bahr el-Ghazal, grey granite; and on the Nile–Congo watershed, granite and gneiss. From the Jebel Marra (Darfur) a dyke of white quartz runs west for 30 or 40 miles. In the Nile basin, the cataracts are caused by transverse ridges and reefs of these hard metamorphic rocks coming to the surface through the eroded sandstones of the river-bed. Over the greater part of the western and central Sudan, south of 13° north latitude, the crystallines are covered by the Nubian sandstone, containing occasional ferriferous beds; but, further south, this is replaced by a ferruginous conglomerate, forming on the surface a rich red earth—the so-called swamp ore—and continuous with the great ironstone and laterite tableland of equatorial Africa. The Nile–Congo watershed is an arm of this ironstone plateau, with occasional outcrops of granite, gneiss and quartz.

The geological section of the Sudan Department of Education undertakes geological surveys and investigations, mine inspections, and the collection of geological specimens. It also issues publications and bulletins, the first of which[1] was published in 1911; from this most of the information given below is derived. The mineral resources of the country, however, are far from being fully explored, and a comprehensive survey would no doubt more than repay its cost.

Alum is obtained in the oasis of Shabb, where there are said to be large deposits.

Antimony is found in the Jebel Marra, near El Fasher, in Darfur.

Coal does not seem to exist in workable deposits, though a lignite of poor quality has been found close to the surface in Dongola province.

Copper is found at Hofrat el-Nahas, situated about

[1] *Notes on the Mineral Deposits of the Anglo-Egyptian Sudan.*

one mile to the west of the River Umbelasha, a tributary of the Bahr el-Arab, on the boundary between the provinces of Darfur and Bahr el-Ghazal. The mines consist of a large number of shallow pits covering an area of about half a square mile. In places the ore crops up in exposed ridges. Natives have probably worked the deposit for centuries; and copper, in the form of rings weighing from 10 to 12 pounds, or in small ingots, was at one time an article of barter in Darfur and western Kordofan. Selected specimens of ore brought in in 1913 assayed 14 per cent. of pure copper. During the Mahdist revolt, the workings were abandoned, but the mines are far from being worked out. The question of transport, however, is a difficulty.

Gold used to be mined all over the Sudan north of Berber (18° north latitude), and there are at least eighty-five important old workings which can, with certainty, be ascribed to the ancient Egyptians, or to the Arabs before the tenth century A.D.

About twelve prospecting licences had been issued up to 1918, and several attempts have been made in the last twenty years to reopen some of the old workings. However, on account of the difficulties of transport and the absence of water in sufficient quantities, only two concessions are at present being worked —one at Gabait, in the Red Sea province, and the other at Um Nabardi, in the province of Halfa, between Halfa and Abu Hamed, about 28 miles north-east of No. 6 railway station.

The holders of the Um Nabardi concession are the Sudan Gold-Field Company. This company was formed in 1904, and began operations at Um Nabardi in 1908. By the end of 1917 it had crushed 168,893 tons of ore, yielding 86,622 ounces of fine gold, with a value of £363,815, the average yield of the quartz being 10·26 dwt. of fine gold per ton. The profit in 1916 was £19,074, but in 1917 there was a decline, and in 1918, for the first time since 1910, the working of the mine resulted in a loss (£1,337). The quartz milled

in 1918 amounted to 20,880 tons, and the total production of bar gold was 12,419 oz., equivalent to 11,248 standard oz. The company has constructed a light portable railway from No. 6 station on the Khartum–Halfa railway to Um Nabardi.

In the Fazogli district (Blue Nile) there are alluvial deposits which have been worked by the natives for centuries, but the best gold washings of this region lie on the Abyssinian side of the frontier. No figures are available, but it is unlikely that more than 200 oz. of gold dust are produced annually by the Sudan native workings. Small deposits also exist at Tira Mandi in the Nuba Mountains and are worked by natives, but the yield is insignificant.

Graphite is reported to exist in the Bongo river district of the Bahr el-Ghazal province. Samples of impure graphite from the Yambio-Meridi road, in the southern Bahr el-Ghazal, have been received at Khartum.

Gypsum and *alabaster* exist in enormous quantities on the Red Sea coast, forty miles north of Port Sudan. The beds in which the gypsum occurs form hill ranges upon the coastal plain, and the large island of Makawa is composed entirely of these. Some of the beds are 30 feet thick; but the clearest, whitest and purest varieties are found in smaller beds, from 2 to 12 feet thick. There are few good harbours near the deposits; Khor Dongonab, 100 miles north of Suakin, is perhaps the best. The absence of sweet water on the maritime plain is a drawback to working. Gypsum has also been found in the Jebel Abiad, about one hundred miles from the Nile, west of Khandak, in the Dongola province.

Iron.—The Tokar district has yielded samples of massive specular iron ore. Masses of iron ore, forming ironstone mountains, exist in the Bahr el-Ghazal and Upper Nile provinces. Among the Nubian sandstone series, highly ferruginous beds occur. The most important found hitherto occur near Wadi Halfa. These are described as existing in the form of lenticular

deposits, two to five miles in length, and generally of a distinctive oolitic character. A bed of highly ferriferous sandstone is reported as underlying a great mass of intrusive basalt or dolerite in the Jebel Alarambia, near Kerma, in the Dongola province. In the Bahr el-Ghazal, Mongalla, and Upper Nile provinces, the rocks are generally covered by a ferruginous conglomerate associated with a lateritic formation. The rivers and streams expose it admirably, and in places between Rumbek and Mvolo, for instance, the thickness is as much as 50 ft. Usually, the surface consists of red loamy soil strewn with boulders of different sizes, and supporting a dense growth of forest and grass. In places, however, the ferruginous conglomerate forms isolated patches of considerable size, so bare of soil that only a scanty supply of short grass succeeds in growing. In the Bahr el-Ghazal province alone, the iron ores cover an area of nearly 31,000 square miles, of which the thickness varies from 3 to 16 ft., but may be much greater in places. The blackening of rocks is a peculiar feature of the conditions obtaining in the arid regions of the northern Sudan. This appears to be due to the presence of moisture, which brings the iron to the surface and deposits it there on evaporation. In areas formed of Nubian sandstone, this chemical action produces a crust which extends over wide areas, but is seldom more than a few inches in thickness. Many travellers have been misled by the appearance of these crusts, and have described the rocks as volcanic. The existence of this peculiar surface action renders it difficult to differentiate the inter-stratified ores from the crust.

In the south and west of the Sudan, the natives have for many years smelted iron, utilising charcoal and clay furnaces about 3 ft. high, with portable goat-skin bellows. Soft iron, apparently of very good quality, is produced, and is distributed among the natives all over the Sudan in the form of weapons, tools, and ornaments. The principal tribes at present engaged in smelting and smith-work are the Jur, around

Mvolo; the Anuak, on the Sobat; the Aliab, on the west bank of the Bahr el-Jebel; and the Bongo, around the Bahr el-Arab. The Arabs smelt iron at Nahud, in western Kordofan, and at several villages in the east of Darfur, employing a highly ferruginous clay and sand found in pockets in the red sand formations of the district. The well-known iron works at Um Semeima and the Jebel Haraza, in Kordofan, have been neglected since the Mahdist revolt. Along the Nile-Congo watershed, which in places is composed almost entirely of ironstone, occurring in porous lava-like shelves, there are many old workings, notably near the source of the Bekki river. At the present day, almost every village has its smelting furnace, which, however, is only used when the local or travelling blacksmith is sent for or makes one of his periodical visits.

Lead has been found in Darfur; and it is reported that the deposit is now being worked.

Limestone and *marble* occur in many places. The deposit at Shereikh is the most important one now being worked.

Natron exists in the Wadi Natrun, 280 miles west of Debbre, on the Darb el-Arbain road. The purest deposit is found in a seam from half to two inches thick, just below the surface sand, and the best working is a little west of the Jebel Kashaf.

Salt.—In the arid regions, many of the desert gravels are salt-bearing, particularly in the Butana, east of the Blue Nile, between Rufaa and Khartum, where the natives have for many years made a living by extracting salt from the surface gravels. North of Khartum, salt is extracted wherever these gravels are found; and impure, yellow-coloured salt of local manufacture can be found in nearly every market town. Many of the natives seem to prefer it to the pure white imported varieties. Salt occurs in beds of considerable size in the Selima oasis and the lagoons on the Red Sea coast at Ras Roweiya, where some abandoned salt workings containing a large supply—the results of the process of evaporation during several years—have been reopened.

In the Upper Nile provinces salt is much more difficult to obtain in most localities; and white European salt is raised to the status of a currency—one trade spoonful for an egg, six for a chicken, and so on. In some districts porters are paid in white salt for their day's work. Except when deposits or salt lakes occur, the only form of salt available is the dirty brown material extracted from a lye obtained from burnt water-weeds, banana stems, &c.

(5) Manufactures

With the exception of crude *iron-smelting* to make soft iron implements in the Upper Nile region, and *gold-crushing* in the Northern Sudan, there are no metallurgic industries of commercial importance. The only native *textile* industries are the weaving of *damur*—a soft, loosely woven cotton stuff—and the "retting" or preparation of various fibres for making ropes and nets. A considerable amount of artistic work is done in silver and gold and in leather for camel saddles, &c., entirely for local demands. Some rough *pottery* is made. Kawa (White Nile province) is the centre of a native boat-building industry.

A local production of *cement* may be developed to a limited extent in connection with irrigation and other engineering projects. In former days, notwithstanding the length of transport, cement for works in the Sudan was imported from England. The outbreak of war, however, compelled the engineers to consider the possibility of making cement in the country. They were fortunate in finding suitable beds of limestone and other requisite materials. Later, the enormous increase in the cost of coal made the burning of these materials a serious problem, and experiments have been made which justify the belief that timber found in the Blue Nile region, reduced to charcoal, will form an effective substitute for coal, so that cement can be manufactured locally without any other import than that of the machinery required.

When some of the enormous potential energy constantly running to waste over the cataracts and falls of the Nile and its tributaries is used for the production of electric power, it is to be hoped that the manufacture of agricultural *fertilizers* will become an extensive industry in the Sudan. The matter is now under the consideration of both the Egyptian and the Sudan Governments.

It is probable that in the near future extensive commercial activities may begin in the *sudd* region, when difficulties of transport have been overcome. The stems of the papyrus have been reported to be suitable for paper-making, and the peat-like *sudd* itself may also prove to be of considerable commercial value, probably chiefly as fuel. In April 1912 a concession for the exclusive manufacture of fuel (suddite) from *sudd*, within a specified area, was granted to a company, which built a factory on Lake No, and imported machinery for making briquettes of *sudd* and coal dust. The company, however, which included in its schemes the formation of a subsidiary company for the manufacture of paper or the export of pulp, was ultimately liquidated. The original experiments which led to the enterprise seem to have been made by two Germans.

(6) Power

With the exception of the town lighting of Khartum, Omdurman, and Port Sudan, and the electric installations of the Railway and Steamers Department at Khartum North—all carried out under Government supervision—there are no electric industries or power works in the Sudan. Few other countries possess greater potential water-power resources, such as, for example, the five cataracts between Khartum and Halfa; the falls and rapids at many spots on the rivers flowing from the Abyssinian highlands; the falls and rapids at several places in Bahr el-Ghazal, notably on the Sueh and Wau rivers; and the Fola and Bedden rapids of the Upper Nile between Nimule and Rejaf.

(C) COMMERCE

(1) Domestic

(*a*) *Principal Branches of Trade*

The domestic commerce of the Anglo-Egyptian Sudan consists chiefly in the collection, for the purpose of export, of the products of the country already enumerated (see above, pp. 96-115). There is also a certain amount of purely internal trade in such products as well as in rough pottery of local manufacture and in the various articles which are sold in the bazaars. At the ports and larger towns there are Greek and, in smaller numbers, Syrian and Indian merchants, who deal in goods imported from Europe, Egypt, and Abyssinia.

(*b*) *Towns and Markets*

The three towns of Khartum, Khartum North, and Omdurman, at the confluence of the White and Blue Niles, together form the headquarters of the trade of the Sudan. *Khartum*, which lies in the angle formed by the two rivers, had in 1917 a population of about 23,000. The capital of the country and the seat of Government, it is a largely Europeanised town, with wide streets and fine buildings. It contains many shops and stores, but its market (*suk*) is smaller and more expensive than that of Omdurman, with which town it is connected by a Government-owned ferry. There is also a steam tramway.

Khartum North (formerly called Halfaya[1]) lies on the right bank of the Blue Nile, opposite Khartum. There are Egyptian army barracks, a customs-house, and storehouses and workshops, including the headquarters, workshops and dockyard of the Steamers and Boats Department of the Sudan Government Railways. There is a large and extending market. The population of the town in 1917 was about 16,000.

Omdurman, situated on the left bank of the main river, opposite the mouth of the Blue Nile, covers an

[1] There is a village still bearing that name four miles to the north.

area four to five miles in length by one mile in breadth, and had in 1917 a population of about 60,000. In the last twenty years it has been converted from an unplanned network of twisted lanes to a town with open spaces and good streets, where many of the leading merchants of the country have their head offices. Omdurman has a very large market and is the centre of the ivory and cattle trades. Until the railway was extended to Kosti and El Obeid it was also the centre of the gum trade.

The chief grain markets in the Blue Nile district are at Singa, Wad Medani, Hassa Heissa, Messelemia and Managil, and, on the White Nile, at El Dueim and El Geteina. The markets for sesame in the eastern Sudan are at Singa, Mafaza, and Gedaref, and in the western Sudan at El Obeid, Kawa, and Kosti. The chief cotton markets are at Tokar, in the Red Sea province, and Wad Medani, in the Blue Nile province. The principal gum markets are at El Obeid, Um Ruaba, and El Nahud in Kordofan, and at Kassala and Gedaref in Kassala province. El Damer, in Berber province, has a thriving sheep trade. Nahud is the centre of the ostrich-feather trade. The chief centres of the date trade are in the Halfa and Dongola provinces, at Tangassi (Dongola province) and other local markets.

El Dueim, on the White Nile, lost much of its importance as a produce market after the railway was carried to El Obeid, in the adjoining province of Kordofan. Many prominent El Dueim merchants transferred their businesses and their residences to El Obeid. Houses in El Dueim to-day realise rather less than 30 per cent. of their former value, while more than three-fourths of the business premises seem to be untenanted. The markets of the town, like those of El Geteina, Kawa, and Kosti, are now owned and conducted by the Government, instead of being leased to native contractors.

El Geteina, on the White Nile, is a large village, divided into two parts, and forming the headquarters

of the district. It is about 80 miles distant from Khartum by road.

El Nahud, in Kordofan, the centre of the ostrich-feather trade, contains about 7,500 inhabitants, including Greeks, Syrians, Arabs, and pure negroes. The town has now become of increased importance, owing to the fact that the whole of the commerce from Darfur—the most recently acquired Sudan province—passes throught it; a well-attended cotton and cattle market is periodically held there.

Goz Abu Guma, the headquarters of the district of that name, stands on the right bank of the White Nile, opposite the island of Wurelat, which makes its appearance in the river during the months of January and February. The eastern channel, opposite to Goz Abu Guma, dries up completely during the rainless season.

Kawa (White Nile province), a large village on the right bank of the river, is the official residence of a British inspector. At this point the river-steamers take on wood for fuel. Kawa appears to be a thriving and busy little place, and the centre of a native boat-building industry; a large and well-attended market is held there at frequent intervals. All around there is cultivation on an extensive scale. The steamers procure their wood from the so-called forests of the vicinity, and, as no new trees are being planted, it can only be a question of time before the woods disappear.

Kosti (White Nile province), like El Dueim, has lost some of its importance since the extension of the railway to El Obeid, but it remains a busy place and a commercial centre. It lies on the east bank of the Nile, some 190 miles from Khartum, with which it is connected by railway. The Murkas comprise about fifty different villages, and, ordinarily, the population is between 7,000 and 8,000. During the rainy season, however, the inhabitants dwindle to a few hundreds, for all who can do so leave the town in order to cultivate their small plots of land, whole families and villages working together vigorously. At that period of the

year Kosti becomes a dead place; even the permanent Egyptian officials finding little to do, while the Europeans choose this season for their annual leave.

There are few buildings of any note in the town; but the former grass-and-straw-built mosque has given place to a more substantial, square-shaped erection of cut stone, with battlemented walls, the foundations resting upon inverted arches. The most remarkable feature about Kosti, however, is the fine swing bridge which crosses the Nile a few hundred yards below the town. It is considered to be one of the best of its kind.

The river-station of *Taufikia* (Upper Nile province), which is some 510 miles from Khartum, forms the distributing centre for the important trade of the Sobat, Bahr el-Ghazal, and Bahr el-Zeraf. There are native barracks built of brick, and several other Government buildings. It was at this spot that Sir Samuel Baker, the famous explorer, made his headquarters in 1865, and he then named his settlement Taufikia, after his patron the Khedive Tewfik.

(*c*) *Organizations to promote Trade and Commerce*

The interests of the producers and of trade generally are carefully fostered by both the central and the provincial Governments. A Central Economic Board was set up in 1906; its members, who are heads of departments and other civil servants, are appointed by the Governor-General, but it elects its own president. The functions of the Board are largely advisory. Under reference from the Governor-General, or on the initiation of individual members, it considers and reports on questions relating to commercial production and economic development. It has power to invite the attendance of, or communication from, officials and others, but possesses no executive authority. There is a Commercial Intelligence Department of the Board which compiles information and publishes annual reports and periodical bulletins.

Practically all the principal economic products of the country have been the subject of preliminary or complete scientific examination by the Wellcome Tropical Research Laboratories at Khartum, or by the Imperial Institute in London. The latter also furnishes commercial reports on Sudan products generally; and there are other agencies that do the same.

There is a Sudan Chamber of Commerce, established at Khartum.

(2) Foreign

The value of the foreign trade of the Anglo-Egyptian Sudan during the years 1907-1917 is shown in the following table :—

Year.	Exports.	Re-exports.	Imports.
	£	£	£
1907	449,329	47,015	1,604,137
1908	515,938	37,079	1,892,798
1909	673,902	60,941	1,775,957
1910	977,621	57,958	1,931,426
1911	1,376,958	74,894	2,273,949
1912	1,373,119	92,657	1,967,429
1913	1,185,186	93,655	2,109,776
1914	1,020,260	87,986	1,891,494
1915	1,577,981	130,315	1,704,250
1916	2,288,403	227,112	2,661,468
1917	3,490,565	238,616	3,102,117

It will be seen from these figures that progress has been steadily maintained. In 1913, which may be taken as a fairly representative year, exports constituted 35 per cent. of the total volume of trade, imports 62 per cent., and re-exports 3 per cent.; the re-exports thus amounting to nearly 5 per cent. of the imports.

Although the year 1917 shows, as compared with 1913, a marked increase in values, this is not due to a proportionate increase in the quantities, but rather to

the rise in prices resulting from war conditions. Only with respect to five articles of export, however, was there a positive decrease in quantity, and in three of these five cases there was also a decrease in value; in the other two cases—undressed skins and senna—the fall in the quantity exported was accompanied by a rise in the total value. Taken as a whole, the amount of the exports has risen, as well as their value, but not to the same degree. On the other hand, in the case of imports, the increase in value was accompanied by a general diminution in quantity.

With the exception of *dura* (large millet) and mother-of-pearl shell, the prices of all commodities have increased. The price of *dura* in 1913 was exceptionally high, on account of a poor yield synchronising with a strong demand from Egypt.

(*a*) *Exports*

Gum is the principal commodity exported from the Sudan, representing, on an average, about 30 per cent. of the total exports. Of rather more than 15,000 tons exported in 1913, France took nearly 24 per cent., Great Britain and Germany 18 per cent. each, the United States 13 per cent., Belgium 7 per cent., and Egypt 5 per cent. In 1917, when enemy countries of course received nothing, practically the entire export of gum went to Egypt and Great Britain, the former taking 47 per cent. and the latter 45 per cent. Egypt has always been to some extent a distributing centre for Sudanese produce *en route* for foreign countries, and although since the opening of the Atbara–Port Sudan Railway in 1906 the majority of the exports from the Anglo-Egyptian Sudan have been despatched by way of the Red Sea, during the war the practice of sending goods through Egypt was to some extent resumed. Thus, while no gum whatsoever is produced in Egypt, and all that is required there is imported from the Sudan, in 1916 £E. 300,000 worth of the commodity, equivalent to 40 per cent. of the Sudanese export, figures among the exports of Egypt.

After the gum the next most important export is *ginned cotton*, of which 22,000 bales were exported in 1917. The figures for earlier years have been given elsewhere (p. 104). The proportions going to countries other than Great Britain and Egypt are very small, and have decreased considerably during the war. What is taken by Egypt is re-exported as part of the Egyptian produce. For the last few years more than half the total Sudanese export has gone direct to Great Britain. A small quantity of unginned cotton is exported to Abyssinia.

There has of recent years been considerable development in the export trade in *live-stock*. Although small quantities go to neighbouring countries and to Malta, Egypt is the only important customer, and before long it is clear that she will be almost entirely dependent upon the Sudan for her meat supply. She cannot continue to drain her own resources by slaughtering local stock without seriously hampering agricultural interests, and the position of the Sudan, with its great extent of pasture land, makes that country her obvious source of supply.

The destination and quantities of *raw hides and skins* exported before and during the war are shown in the following tables :—

(i) *Untanned Hides*

Destination.	1913.	1914.	1915.	1916.
	Kilos.	Kilos.	Kilos.	Kilos.
Egypt	23,477	69,500	353,608	435,868
Great Britain	60,556	163,004	66,185	222,255
India and Aden	52,912	160,428	—	3,570
France...	120,610	188,223	8,485	5,050
Italy	—	36,843	245,405	45,753
Eritrea...	—	58,577	440,361	31,436
Greece...	2,437	12,888	31,697	—
Austria	112,872	69,996	—	—
Germany	19,410	33,289	—	—
Other countries	10,973	1,090	2,510	—
Total	403,247	793,838	1,148,251	743,932

(ii) *Untanned Skins of Sheep and Goats*

Destination.	1913.	1914.	1915.	1916.
	Units.	Units.	Units.	Units.
Egypt	59,882	81,034	91,677	141,876
Great Britain	122,962	200,529	100,931	174,642
France	53,234	67,772	580	—
Italy	—	2,733	1,720	76
Eritrea...	7,964	11,524	4,890	38,477
Austria	16,186	6,459	—	—
Germany	10,991	27,650	—	—
United States... ...	99,146	71,015	66,184	6,726
Other countries ...	1,093	607	—	—
Total	371,458	469,323	265,982	361,797

Egypt is now setting up tanneries and making her own boots and shoes. Should the requisite machinery be set up in the United Kingdom—as has been done in Italy to deal with the Abyssinian hides obtained through Eritrea—the Sudan could be depended upon for a supply of raw material.

Sesame goes mainly to Egypt, whence large quantities are re-exported, for the most part to France, who is also, after Egypt, the largest buyer from the Sudan direct. Great Britain takes practically none of this commodity.

Up to 1914 only a small quantity of *dura* (large millet) was exported, about three-fourths of which went to Eritrea. During the war the export rose enormously, increasing from 2,000 tons in 1913 and 530 tons in 1914 to 46,000 tons in 1915, nearly 57,000 tons (30 per cent. of the total yield) in 1916 and 84,000 tons in 1917. Egypt has now become the principal buyer, taking 24,000 tons as against 19,000 tons taken by Eritrea in 1916. A small amount

of the grain has also found its way into the British market, where it is known as *dari*.

In 1915 about 9,000 tons and in 1916 about 10,000 tons of *dukhn* (spiked millet) were exported, almost all to the Hejaz. Previously the export of this grain had been negligible.

Cotton-seed is almost exclusively exported to Great Britain for oil production. The greater the output of ginned cotton the greater naturally should be the amount of cotton-seed available for export (see above, p. 105).

Ivory is exported mainly to Great Britain, which takes on an average from half to three-fourths of the total output; nearly all the rest goes to the United States. During the war the export has decreased.

Though the trade in *senna* has suffered owing to the war, it had previously developed considerably, and is capable of still greater expansion. Before the war Egypt was by far the largest buyer, but in succeeding years the percentage taken by that country has diminished, while in the export to Great Britain there has been a great increase, both actual and relative. The export to the United States, on the other hand, though representing a larger percentage in 1914 than in 1913, has steadily decreased, the total figure being much smaller in 1914 than in the previous year. Among remaining countries Germany was the most prominent purchaser.

The following table shows the distribution of the senna export in the years 1913–16:—

	1913.	1914.	1915.	1916.
	Percentage.	Percentage.	Percentage.	Percentage.
Egypt	73	58	61	44
Great Britain ...	2	10	34	56
United States ...	10	25	5	—
Other countries ...	15	7	—	—

The following table shows the quantities of the principal exports in the years 1911–16, and the average over the period 1911–15:—

Articles.	Units of Weight.	1911.	1912.	1913.	1914.	1915.	Average 1911–1915.	1916.
Bullocks and cows ...	Units.	21,611	15,249	10,532	11,390	23,882	16,533	15,304
Butter and ghee ...	Tons.	114	145	143	76	204	136	130
Cotton (ginned) ...	,,	3,049	1,619	2,318	1,712	4,305	2,601	2,941
Cotton (unginned) ...	,,	2,184	3,044	39	5	22	1,059	27
Cotton-seed	,,	7,105	3,501	4,786	3,012	8,244	5,330	8,165
Dates	,,	3,739	2,816	2,785	2,343	2,586	2,854	3,697
Dom palm-nuts ...	,,	2,960	2,021	1,349	2,573	647	1,910	462
Dura	,,	17,794	796	2,080	532	46,117	13,464	56,784
Gold	Grammes	250,868	348,004	462,467	595,828	596,186	450,671	570,795
Ground-nuts ...	Tons.	1,123	826	719	208	481	671	1,035
Gum	,,	14,357	19,615	15,129	12,372	11,615	14,618	13,480
Ivory	,,	100	107	125	92	60	97	78
Senna	,,	1,000	890	810	309	691	740	434
Sesame	,,	4,936	6,096	6,841	3,157	7,002	5,606	12,421
Sheep and goats ...	Units.	97,752	110,824	99,174	87,569	87,730	96,610	74,051
Untanned skins ...	,,	413,521	400,557	371,458	469,323	265,982	384,168	361,797

(*b*) *Imports*

The article most largely imported is *cotton fabrics*, which in 1913 represented 24 per cent. of the total value of imports and in 1917 26 per cent. The price rose 48 per cent., but the quantity was only 4 per cent. larger in 1917 than in 1913. The following table shows the percentage of cotton fabrics supplied by each country:—

	1913.	1917.
	Per-centage.	Per-centage.
Egypt	51	59·5
Great Britain	28	8·5
Italy	10	1·5
India	8	30·5
Other countries	3	—

Cotton piece-goods coming from Egypt, however, are entirely of foreign origin, as the traders of the Sudan find it more convenient to buy from Egyptian importing agents, from whom they can easily obtain credit, than directly from abroad. If the table of percentages were based on the countries of ultimate origin, it would have to be reconstructed as follows:—

	1913.	1917.
	Per-centage.	Per-centage.
Great Britain	62	64
Italy	27	6
India	8	30
Other countries	3	—

Indian cotton is imported by the Indian traders (*banians*) at Suakin, whither it is brought by Bombay coasting steamers. At one time, when Suakin was isolated from the Nile valley by 300 miles of desert, local needs only were supplied in this way; but since the railway has reached the port there has been a much wider distribution of goods from India. Cotton from Italy is brought by Italian steamers calling at Port Sudan on their way to Massawa in Eritrea.

Although Great Britain at present holds the bulk of the cotton trade with the Sudan, it must be remembered that other countries, by studying the needs of the inhabitants, conforming with local customs and currency and quoting easy terms, might make a bid to capture this lucrative market.

The quantity of *sugar* imported in 1917 was 30 per cent. less than the import of 1913, but as the price had risen as much as 128 per cent., the total value was 60 per cent. higher. Practically all the sugar consumed in the Sudan (93·26 per cent. in 1913, 99·66 per cent. in 1917) is the produce of Egypt, three-fourths of it being sent by the Red Sea, the rest by the Nile. Before the war a little sugar (about 6 per cent. in 1913) came from Austria, but it was inferior in quality to the Egyptian and slightly higher in price, and had nothing to recommend it except a superior style of packing. Normally, Great Britain supplies a few cases of castor sugar only.

The import of *metal* and *metal manufactures* fell off greatly during the war, no doubt on account of the shortage of shipping. In normal times about three-fourths of this class of goods came from Great Britain. In 1917 the import thence dropped to 30 per cent. and that from Egypt rose to 64 per cent.; but it may be taken for granted that all such goods coming from Egypt were really of British origin.

The import of *machinery* has decreased a little in value and therefore, it is to be presumed, considerably in quantity. In 1913 Great Britain supplied 77 per cent.; Germany 11 per cent.; and Egypt, by re-exportation, 8 per cent. In 1917 only 18 per cent. came direct from Great Britain, while 80 per cent. was re-exported from Egypt.

Before the war all *coal* was brought from Great Britain, but in 1917 nearly half the requirements of the country were supplied by the Union of South Africa. Between 1913 and 1917 the price increased by 254 per cent., but the quantity imported remained fairly constant.

For *flour* the 1917 figures, as compared with those for 1913, show an increase in price of 85 per cent., and a decrease of 54 per cent. in quantity. The largest imports were from India and Egypt, Russia and Rumania having dropped out of the list on account of the war.

Most of the *coffee* consumed in the Sudan comes from Abyssinia, being sent to Khartum *via* the trading port of Gambela. This trade has been less harmed by the war than any other. The price rose only 7 per cent. between 1913 and 1917, while the quantity imported increased by 104 per cent. The trade, in fact, has grown steadily, but it is capable of still greater development, and Abyssinian coffee, which is of good quality, should find a European market. A small quantity of coffee is also sent to the Sudan from Brazil and Aden and a little is re-exported from Egypt.

In contrast with coffee, *tea*, which comes mainly from India, increased 80 per cent. in price and only 6 per cent. in quantity.

The value of the import of *spirituous liquors, beer and wines* declined from £E. 43,651 in 1913 to £E. 31,670 in 1917, representing 2 per cent. of the total import trade in the former year and only 1 per cent. in the latter. Seeing that the rise in the price of

these goods has been very great, the fall in quantity must have been still more marked. One cause of this has been the strict control exercised on the trade by the Government in order to prevent the traffic in drink among the natives. In 1913 Great Britain supplied (wines, spirits, and beers) 57 per cent.; Egypt, by re-exportation, 24 per cent.; Austria, Germany, Belgium, and Holland (all beers), 7 per cent.; and Greece (wines) 12 per cent. In 1917 Great Britain furnished 33 per cent. and Egypt re-exported 62 per cent., the remaining 5 per cent. being imported from Cyprus, Eritrea, France, Holland, and Italy.

The *soap* import has increased in value by 32 per cent. and in quantity by 11 per cent. The demand is naturally considerable in a country where the inhabitants wear clothing of cotton or other washable material. In 1913 Egypt supplied 73 per cent. of the needs of the Sudan, partly by re-exports, France 13 per cent. and Great Britain 10 per cent. In 1917 Egypt supplied 60 per cent. and Great Britain 39 per cent.

The trade in *empty sacks* is increasing and will presumably continue to do so with the development of Sudanese production. Not only the price but the number imported nearly doubled between 1913 and 1917. They came from Egypt and India in about the proportion of two to one before and three to one during the war.

Taking the imports as a whole, it appears that in 1917 Great Britain, her Dominions and Protectorates, furnished 92 per cent., the Allied countries 4 per cent., and the neutral countries the same. In 1913 the countries which were subsequently to become enemies of Great Britain contributed only 3 per cent. The war therefore, so far as the origin of goods is concerned, has not affected the import trade of the Sudan to any extent, and the dearth of commodities from enemy countries has had little, if any, effect.

The following table shows the quantities of the

principal imports in the years 1911–16, and the average for the period 1911–15:—

Articles.	Units of Weight.	1911.	1912.	1913.	1914.	1915.	Average. 1911–1915.	1916.
Butter and ghee ...	Tons.	198	214	211	176	132	186	127
Candles	,,	221	186	187	176	113	177	177
Coal	,,	61,096	73,575	73,064	55,358	41,779	60,974	70,695
Coffee	,,	1,350	1,739	1,657	1,488	1,685	1,584	2,815
Cotton fabrics ...	,,	4,370	3,107	3,820	2,963	4,091	3,670	4,852
Dura and dukhn (including maize) ...	,,	—	6,326	7,759	27,345	595	—	243
Empty sacks ...	,,	1,572	1,188	1,282	538	2,404	1,397	2,274
Flour (wheat) ...	,,	7,510	8,272	7,904	9,481	5,503	7,734	6,752
Horses, camels, &c....	Units.	3,716	2,373	1,593	792	409	1,777	914
Iron and steel (manufactured)	Tons.	16,903	2,889	5,555	2,672	3,534	6,311	908
Petroleum ...	,,	283	150	213	130	196	194	244
	Cases.	51,031	56,489	65,892	35,386	43,814	50,522	43,953
Rice	Tons.	2,235	3,187	2,546	3,127	1,219	2,463	1,647
Salt	,,	3,850	5,745	3,781	934	1,632	3,188	1,149
Soap	,,	1,049	938	956	887	885	943	975
Sugar (refined) ...	,,	11,833	13,768	16,066	14,931	10,845	13,489	11,991
Tea	,,	547	543	628	548	418	537	574
Wheat	,,	480	2,600	1,727	3,779	1,626	2,042	554

(c) *Re-Exports and Transit Trade*

The re-exports comprise various articles of commerce originally imported from abroad, and resold to neighbouring countries.

With the exception of a certain amount of machinery, the chief item is *cotton fabrics*, which represent 34 per cent. of the total re-exports. In 1913, the re-exports of cotton fabrics amounted to £E. 20,820, and in 1917 to £E. 80,843, and they were distributed among the purchasing countries in the following proportions:—

	1913.	1917.
	Percentage.	Percentage.
Abyssinia	44·00	45·82
Arabia	0·40	28·37
Austria	0·30	—
British East Africa	0·40	—
Congo	16·00	3·65
Egypt	26·20	14·30
Eritrea	4·40	6·55
French Somaliland	1·50	—
Great Britain	5·00	0·05
India and Aden	0·40	1·26
Uganda	1·40	—

It will be seen that Abyssinia is by far the largest purchaser, Egypt in normal times coming second. The comparatively large proportion taken by Arabia in 1917 was doubtless on account of the presence of troops in the Hejaz.

There is a certain amount of local trade on both the northern and southern frontiers, for which Halfa and Mongalla are respectively the centres. The

trading post at Gambela (Abyssinia) also purchases from the Sudan; and there is an interchange of commodities between the two coasts of the Red Sea.

In addition to this movement of re-exports, there is a certain amount of transit trade between the Sudan and the bordering countries, with the exception of Egypt. Goods going to and from Abyssinia, *via* the trading post of Gambela, and consigned from and to countries abroad, pass through the Sudan. A small percentage of this transit trade is dealt with at Rejaf and Nimule, which are adjacent to the Congo and Uganda frontiers respectively. The principal articles of trade going into Abyssinia, *via* Gambela, in transit, are cotton piece-goods and (before the war) Maria Theresa dollars, manufactured in Austria and used as local currency.

Of the cotton piece-goods coming into Gambela in 1913, 73 per cent. were consigned from Italy and 27 per cent. from Great Britain. In 1917 57 per cent. came from Great Britain and 43 per cent. from Italy, the total quantity being 54 tons. The principal article leaving Abyssinia in transit is beeswax, which amounted in 1913 to 210 tons and in 1917 to 205 tons. In 1913 Great Britain took 71·20 per cent., Germany 24·50, Austria 2·50, and France 1·80. In 1917 the whole of this product went to Great Britain. The total value of the Sudan transit trade in 1913 was £E. 69,150, and in 1917 £E. 58,145.

Trade from Wadai in the French Sudan used to pass through Khartum on its way to Europe, but the exactions for transit through the Sultanate of Darfur, then independent, were so heavy that this route was abandoned in favour of that by the west and north, which was longer, and impracticable during the hot season. The old state of affairs may perhaps now be restored. If so, there should be an opening for British goods in the Darfur market, both for local needs and for supplying the French in Wadai. Trade in Darfur is already reviving.

(*d*) *Customs and Tariffs*

There are customs-houses at Port Sudan, Suakin, and other ports on the Red Sea coast, at Wadi Halfa on the Nile, and at various places on the southern, eastern, and western frontiers; also at the trading post of Gambela on the Baro, leased to the Sudan by the Abyssinian Government.

An 8 per cent. *ad valorem* import duty is charged on all imported goods, with the following exceptions: timber for building, coal, petroleum, liquid fuel, firewood, charcoal, cattle, sheep and goats, and the fresh or frozen meat of those animals; on all these 4 per cent. is charged. Leaf tobacco is charged 250 millièmes per kg., manufactured tobacco, cigars, and cigarettes 300 millièmes per kg. Tombac, an alloy used in making cheap jewellery, is charged 274 millièmes per oke (2·75 lb.) on the Red Sea coast, and 234 millièmes on the inland frontiers. Beer and stout pay an *ad valorem* duty of 10 per cent., champagne 25 per cent., all other wines 15 per cent., and spirits 40 per cent.

The import duty on goods originating from Eritrea, Uganda, Belgian Congo, and French Congo is 5 per cent. *ad valorem*.

There is an export duty of 1 per cent. *ad valorem* on all Sudan products. No export duty is charged on foreign goods re-exported, and a refund of the difference between the import and export duties is made in the case of merchandise re-exported within six months, provided that it can be identified. Goods in transit are free of duty, except coal and liquid fuel, on which a duty of 1 per cent. is payable.

No alcohol, cattle, firearms or ammunition can be imported or exported without a permit. Certain goods, such as ivory, gum, and rubber, are subject to royalties on leaving the Sudan. All such goods originating from Eritrea, Abyssinia, Belgian Congo, French Congo, and Uganda, on their importation into the Sudan, are

subject to an import duty equivalent to the Sudan royalty on exported produce, this being not less than the *ad valorem* import duty.

At Gambela the collection of duties is entrusted to the Sudan Government, and two British representatives are stationed there in addition to a British Consul. The Sudan Government has constructed warehouses for the storage of goods awaiting shipment by steamer to Khartum. Goods entering Abyssinia from the Sudan, in transit, pay no duty, as the duty is collected at Port Sudan on behalf of the Abyssinian Government. European goods re-exported within six months from the Sudan to Abyssinia receive a rebate of 7 per cent. on the Sudan duties, but have to pay 8 per cent. at Gambela. Sudan products pay 6 per cent., 5 per cent. for Abyssinian duty, and 1 per cent. as an export duty, and *vice versa* for Abyssinian products. If the latter pass in transit to Port Sudan *en route* to Europe 5 per cent. is refunded. The 10 per cent. export duty on all Abyssinian products passing out of Abyssinia is collected before the goods reach Gambela.

(*e*) *Commercial Treaties now in Force*

The foreign commerce of the Anglo-Egyptian Sudan is governed by the treaties in force in Egypt, the only treaty peculiar to the Sudan being the Customs Convention with the Italian colony of Eritrea, which was ratified at Cairo on January 2, 1902. This Convention fixes the import duty on natural produce imported into either of these two countries from the other at 5 per cent., and the export duty at 1 per cent. It further prohibits traffic in arms and ammunition between the two countries and makes the traffic in liquors dependent on permission. By agreement with the Governments of Uganda, Belgian Congo, and French Congo, the Convention applies also to those countries.

(D) FINANCE

(1) *Public Finance*

The following table shows the revenue collected each year since the re-conquest of the Sudan :—

Year.	£E.
1898	35,000
1899	126,000
1900	156,000
1901	242,000
1902	270,000
1903	462,000
1904	576,000
1905	665,000
1906	780,000
1907	923,000
1908	924,000
1909	982,000
1910	1,104,873
1911	1,236,446
1912	1,355,635
1913	1,568,352
1914	1,544,500
1915	1,500,000
1916	1,642,000
1917	1,806,000
1918	2,255,000 (estimated)

These figures indicate a steady growth in the prosperity of the country.

Up to the end of 1912 the revenue did not cover the ordinary requirements of the administration, and the budget was balanced by an annual grant in aid from the Egyptian Government. The amount of this grant varied, the highest figures being £E. 417,000 in 1900 and £E. 335,000 in 1912. The actual cost to Egypt, however, was not so high as these figures appear to indicate. For instance, in the year 1912, the last year in which the contribution was received, the sum of £E. 172,000

was refunded on account of the maintenance of the Egyptian army in the Sudan, leaving a net contribution of £E. 163,000 by Egypt in aid of the expenses of the Civil Government. Moreover, it must be borne in mind that Egypt collected and retained the customs dues on merchandise passing through Egyptian ports to and from the Sudan, which in 1912 were estimated at £E. 85,000. The Sudan Government at this period also had to bear the cost of certain services which formerly were a charge on the Egyptian budget, and to pay the *seigneuriage*, a royalty on silver currency purchased by the Sudan from the Egyptian Treasury, representing in 1911 a sum of £49,000 on £200,000 worth of silver and nickel. In view of these facts, and also of the benefit accruing to the Egyptian State Railways through the carriage of passengers and goods going to and coming from the Sudan, as well as to the Egyptian postal and telegraphs administration through the transmission of postal matter and telegrams, the grant in aid can hardly be said to have been an undue tax on Egypt.

The revenue of the Sudan for the year 1913 met the ordinary requirements of the administration. The chief heads of revenue in that year were as follows:—

Provincial Receipts.

	£E.
Land Tax	167,508
Date Tax	16,380
Animal Tax	81,599
Tribute from Nomad Tribes ...	30,059
Royalties	89,897
Timber and Firewood	31,273
Traders' Tax	7,906
Miscellaneous	94,412

Departments and Services.

Customs	186,837
Steamers	147,502
Posts and Telegraphs	63,607

	£E.
Railways	553,887
Agriculture and Marts	723
Legal	10,555
General Central Services	31,779
Veterinary Department	9,255
Other Departments and Services ...	45,173
Total	1,568,352

Now that the annual receipts exceed ordinary expenditure the surplus is credited to the Reserve Fund, which fully guarantees the interest on the loans for special credits on account of public works, irrigation, &c.

(2) *Currency*

The currency of the Anglo-Egyptian Sudan is the same as that of Egypt, the monetary unit being the gold Egyptian pound (£E.) of 100 piastres (or 1,000 millièmes), of which the value in sterling is £1 0*s*. 6¼*d*.

Coins in circulation are the Egyptian pound and half-pound, in gold; 20, 10, 5, and 2 piastre pieces, in silver; 1, ½, ⅕, $\frac{1}{10}$ piastre pieces, in nickel; and $\frac{1}{20}$ piastre piece in bronze.

Silver coin is legal tender only up to £E. 2, and nickel or bronze coins up to 10 piastres. For some years gold coins have not been issued, and the gold circulating in Egypt and the Sudan is almost exclusively in English sovereigns, which are legal tender at the rate of 97½ piastres. As a temporary measure the Indian rupee has been made legal tender at the rate of 6·5 piastres.

Bank-notes are issued by the National Bank of Egypt in various denominations from £E. 0·25 to £E. 100. They are in principle not legal tender, but since the war they have been made legal tender and inconvertible. Their circulation has received an extraordinary impetus since the withdrawal of gold. The amount issued at the end of 1915 was about £E. 11,550,000,

whereas it had never before the war exceeded £E. 3,000,000.

At Gambela the Maria Theresa dollar is in use. It is 430 grains in weight, and is of the same value as the Menelik dollar (about two shillings). Its value, however, changes according to the price of silver. The Menelik dollar, which is likewise current, is coined at the capital, Addis Abbaba, in the Abyssinian Government mint, as is also the piastre, which is in much demand in small trading. Bars of salt are still used as a medium of exchange, and even blank cartridges are used as small specie.

A proclamation dated April 11, 1918, prohibits until further notice the import of gold into the Sudan in the form of coin or ingots, except under licence from the Financial Secretary of the Sudan Government, or his authorised representative.

(3) *Banking*

The chief banks with British connections are the *National Bank of Egypt* and the *Anglo-Egyptian Bank*, which conduct all the ordinary business of banking. At Gore (Abyssinia), the market-place for the trade which has its outlet at Gambela, down the Sobat to the Nile, there is an agency of the *Bank of Abyssinia*. This bank is chartered under the Egyptian laws, with a capital of £500,000, one-fourth of which is paid up. It is controlled by the National Bank of Egypt.

(E) GENERAL REMARKS

Considering that the total value of the trade in the Anglo-Egyptian Sudan amounted in 1916 to close on £3,500,000, it is difficult to realise that only sixteen years before that date the whole country was in a state of barbarism and anarchy, with practically no internal trade, except in slaves, and with no external commerce whatsoever. This change has been brought about without excitement and almost without remark.

The extension of the Khartum–Sennar railway to El Obeid increased enormously the proportions of the Kordofan gum trade, and there is little doubt that its further extension westward to El Fasher will bring about an even greater development of trade and traffic, in which French Wadai will participate.

Lying as it does comparatively close to the great markets of the Old World, and possessing an enormous area of pastoral country, there is every probability that the Sudan will become one of the great meat-supplying countries. Its meat trade with Egypt and Europe is even now very large, and there seems to be no reason why it should not be increased greatly when electric power and cold storage plants are available. Cattle and sheep raising is, indeed, one of the most promising industries of the Sudan.

Great expectations have been raised regarding the suitability of the Sudan for cotton-growing, and there is little doubt that these will in the long run be justified. The Sudan is a country of unlimited possibilities for the future supply of cotton, and may well become one of the main sources of our supply of "fine" cotton. The development of the industry can only be assured by pushing on the irrigation works and railway projects already sanctioned by the Government. In some areas—the Tokar and Kassala districts, for instance—there is sufficient labour; in other parts, however, the scarcity of labour is the controlling factor in the development of the country and of cotton-growing in particular.

In that part of the Sudan which lies far south of the recognised irrigation-cotton areas there are further possibilities of cotton cultivation under somewhat different conditions. Extensive areas of fertile country exist in the Bahr el-Ghazal and Mongalla provinces, where the rainfall is tropical, and where rain-grown cotton of good quality and similar in character to American has been already experimentally cultivated in considerable quantities. There is, in fact, every probability that, when the fertile ironstone districts

lying between the swamp region and the Nile-Congo watershed, in the southern and western Bahr el-Ghazal districts, are opened up by railway communications, large areas will be put under cotton by the natives, as has been the case in Uganda and elsewhere. Railways are the crying need of this Upper Sudan region.

Rubber is another product which has almost unlimited prospects of development in the Sudan. Ceara rubber needs no capital outlay, for *Manihot glaziovii*, from which it is obtained, can be planted in bush country which would otherwise lie waste. There seems no reason why many thousands of square miles of bush in the Sudan should not yield commercial rubber—the cheap article that is required for a thousand and one uses in every department of industry. Nor does there seem to be any reason why the whole production should not be undertaken by natives, since neither capital, skilled labour, nor machinery is needed.

Tropical Africa being unsuited for white colonization, its development must be chiefly by native agency; not by the exploitation of the native for the good of the white man, nor by allowing him to continue in his lazy habits, but by introducing to him a phase of the world's competition, and fostering a taste for European goods—mainly through the establishment of railways—and by offering him the means of obtaining money with which to satisfy his gradually increasing wants. Then the real development of the far interior of the Sudan will begin, and thriving native industries will be created, as they have been in the coastal regions and elsewhere.

As regards future railway construction, upon which the development of the Upper Sudan almost wholly depends, the most important project is the extension of the Cape-to-Cairo railway, or, as an alternative, the improvement of the existing rail and steamer transport system by the construction of a short line from Rejaf to Nimule (see above, p. 84). As previously pointed out, the most feasible Cape-to-Cairo route,

which would, moreover, develop the great cotton areas of the Bahr el-Ghazal and tap a vast supply of mahogany, is that *via* El Odaiya, in Kordofan, to Kafia-Kengi, and along the Nile-Congo watershed to Rejaf and Lake Albert. The first section of this railway would be part of the proposed extension of the Kordofan line to El Fasher, and it is worth noting that this El Fasher extension is in the direction of Lake Chad, which the Kano railway in Northern Nigeria is approaching. If a trans-continental connection between these two lines were made across French Wadai, the West African colonies would be brought within a few days' journey of Egypt.

It is doubtful if any other region of the world contains greater potential water-power than does that part of Africa along which the Cape-to-Cairo railway and air routes must run, and it is probable that most of the railways, both built and projected, in the Anglo-Egyptian Sudan could be electrified without any great difficulty.

The quickest route for sportsmen and tourists on their way to Equatorial Africa is *via* the Sudan, and it is probable that under normal conditions Khartum may become as much a tourist centre for the Sudan as Cairo is for Egypt. There does not appear to be any danger of tribal uprisings or other political trouble on any part of the western or south-western frontiers; but some apprehension has been felt as to the possibility of sleeping-sickness gaining a footing in the Bahr el-Ghazal and in part of the Mongalla province west of the Nile. This disease is prevalent in the Upper Welle district of the Congo, and the Upper Mbomu in the French Ubanghi-Shari, but along the parts of the frontier which are opposite those districts measures are taken to prevent the natives crossing to or from the Sudan.

In spite of the present peaceful conditions of the Sudan, the possibility of trouble arising on the borders of Abyssinia is ever present, owing to the incessant and unrestrained traffic in arms and ammunition with the

Sudan tribes, more particularly the Nuer. For years past the situation in the Nuer country has been disturbing, close proximity enabling the naturally troublesome tribesmen to barter their ivory, &c., for cheap arms with the Abyssinian and Galla traders who swarm there for that purpose. It is probable that, if this traffic could be stopped, the section of country occupied by the Nuer would soon become as well regulated and as peaceful as any other part of the Anglo-Egyptian Sudan. The matter is aggravated by the apparent inability of the Abyssinian Government to help in suppressing this traffic, which, moreover, has always been encouraged by German agents. The situation has not been improved by the fact that, at the outbreak of war, a military expedition which was on the point of being despatched to the disaffected Nuer district of Garjak and to the Anuak country had to be postponed. The wily tribesmen, aware of the preoccupation of the Administration, boldly carried on their illicit traffic, and made use of the weapons thus obtained to wage further and fiercer warfare upon their more peaceful and helpless neighbours. The chief channel through which arms and ammunition enter Abyssinia, and so gain access to the Sudan, is *via* Jibuti, in French Somaliland; and the districts mainly implicated in fostering the trade directly with the Sudan tribes are those north and south of the Sobat.

APPENDIX

I

(a)

AGREEMENT BETWEEN HER BRITANNIC MAJESTY'S GOVERNMENT AND THE GOVERNMENT OF THE KHEDIVE OF EGYPT, RELATIVE TO THE FUTURE ADMINISTRATION OF THE SUDAN.

[*Signed at Cairo, January* 19, 1899.]

Whereas certain provinces in the Sudan which were in rebellion against the authority of His Highness the Khedive have now been reconquered by the joint military and financial efforts of Her Britannic Majesty's Government and the Government of His Highness the Khedive;

And whereas it has become necessary to decide upon a system for the administration of, and for the making of laws for, the said reconquered provinces, under which due allowance may be made for the backward and unsettled condition of large portions thereof, and the varying requirements of different localities;

And whereas it is desired to give effect to the claims which have accrued to Her Britannic Majesty's Government, by right of conquest, to share in the present settlement and future working and development of the said system of administration and legislation;

And whereas it is conceived that for many purposes Wadi Halfa and Suakin may be most effectively administered in conjunction with the reconquered provinces to which they are respectively adjacent:

Now, it is hereby agreed and declared by and between the undersigned, duly authorized for that purpose, as follows:—

Art. I. The word "Sudan" in this Agreement means all the territories south of the 22nd parallel of latitude, which—

1. Have never been evacuated by Egyptian troops since the year 1882; or
2. Which, having before the late rebellion in the Sudan been administered by the Government of His Highness the Khedive, were temporarily lost to Egypt, and have been reconquered by Her Britannic Majesty's Government and the Egyptian Government acting in concert; or
3. Which may hereafter be reconquered by the two Governments acting in concert.

Art. II. The British and Egyptian flags shall be used together, both on land and water, throughout the Sudan, except in the town of Suakin, in which locality the Egyptian flag alone shall be used.

Art. III. The supreme military and civil command in the Sudan shall be vested in one officer, termed the "Governor-General of the Sudan." He shall be appointed by Khedivial Decree on the recommendation of Her Britannic Majesty's Government, and shall be removed only by Khedivial Decree, with the consent of Her Britannic Majesty's Government.

Art. IV. Laws, as also orders and regulations with the full force of law, for the good government of the Sudan, and for regulating the holding, disposal, and devolution of property of every kind therein situate, may from time to time be made, altered, or abrogated by Proclamation of the Governor-General. Such laws, orders, and regulations may apply to the whole or any named part of the Sudan, and may, either explicitly or by necessary implication, alter or abrogate any existing law or regulation.

All such proclamations shall be forthwith notified to Her Britannic Majesty's Agent and Consul-General in Cairo, and to the President of the Council of Ministers and His Highness the Khedive.

Art. V. No Egyptian law, decree, Ministerial arrêté, or other enactment hereafter to be made or promulgated shall apply to the Sudan or any part thereof, save in so far as the same shall be applied by Proclamation of the Governor-General in manner hereinbefore provided.

Art. VI. In the definition by Proclamation of the conditions under which Europeans, of whatever nationality, shall be at liberty to trade with or reside in the Sudan, or to hold property within its limits, no special privileges shall be accorded to the subjects of any one or more Powers.

Art. VII. Import duties on entering the Sudan shall not be payable on goods coming from Egyptian territory. Such duties may, however, be levied on goods coming from elsewhere than Egyptian territory; but in the case of goods entering the Sudan at Suakin, or any other port on the Red Sea littoral, they shall not exceed the corresponding duties for the time being leviable on goods entering Egypt from abroad. Duties may be levied on goods leaving the Sudan at such rates as may from time to time be prescribed by Proclamation.

Art. VIII. The jurisdiction of the Mixed Tribunals shall not extend, nor be recognised for any purpose whatsoever, in any part of the Sudan, except in the town of Suakin.

Art. IX. Until and save so far as it shall be otherwise determined by Proclamation, the Sudan, with the exception of the town of Suakin, shall be and remain under martial law.

Art. X. No Consuls, Vice-Consuls, or Consular Agents shall be accredited in respect of nor allowed to reside in the Sudan

without the previous consent of Her Britannic Majesty's Government.

Art. XI. The importation of slaves into the Sudan, as also their exportation, is absolutely prohibited. Provision shall be made by Proclamation for the enforcement of this Regulation.

Art. XII. It is agreed between the two Governments that special attention shall be paid to the enforcement of the Brussels Act of the 2nd July, 1890, in respect of the import, sale, and manufacture of firearms and their munitions, and distilled or spirituous liquors.[1]

Done in Cairo, the 19th January, 1899.

CROMER.
BOUTROS GHALI.

(*b*)

The "Suakin Amendment" to the Agreement of January 19, 1899.

AGREEMENT BETWEEN HER BRITANNIC MAJESTY'S GOVERNMENT AND THE GOVERNMENT OF THE KHEDIVE OF EGYPT, RELATIVE TO THE INCLUSION OF SUAKIN IN THE AGREEMENT OF JANUARY 19, 1899.

[*Signed at Cairo, July* 10, 1899.]

Whereas under our Agreement made the 19th day of January, 1899, relative to the future administration of the Sudan, it is provided by Article VIII that the jurisdiction of the Mixed Tribunals shall not extend nor be recognized for any purpose whatsoever in any part of the Sudan except in the town of Suakin;

And whereas no Mixed Tribunal has ever been established at Suakin, and it has been found to be inexpedient to establish any such Tribunal in that locality, by reason notably of the expense which the adoption of this measure would occasion;

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[1] Art. VIII of the Brussels Act prohibits importation of firearms and ammunition into territories between 20° north latitude and 22° south latitude and extending westward to the Atlantic Ocean, and eastward to the Indian Ocean and its dependencies, &c., save under certain conditions defined in Art. IX.

Art. XC-XCV are restrictive measures concerning traffic in spirituous liquors, prohibition of importation and manufacture of such for native use in regions of this zone where either on account of religious belief or from other motives the use of distilled liquors does not exist or has not been developed.

And whereas grievous injustice is caused to the inhabitants of Suakin by the absence of any local jurisdiction for the settlement of their disputes, and it is expedient that the town of Suakin should be placed upon the same footing as the rest of the Sudan;

And whereas we have decided to modify our said Agreement accordingly in manner hereinafter appearing:

Now, it is hereby agreed and declared by and between the undersigned, duly authorized for that purpose, as follows:—

Art. I. Those provisions of our Agreement of the 19th day of January, 1899, by which the town of Suakin was excepted from the general régime established by the said Agreement for the future administration of the Sudan, are hereby abrogated.

Done at Cairo, the 10th July, 1899.

CROMER.
BOUTROS GHALI.

II

DECLARATION COMPLETING THE CONVENTION OF JUNE 14, 1898[1] (SPHERES OF INFLUENCE IN CENTRAL AFRICA) BETWEEN GREAT BRITAIN AND FRANCE.

[*Signed at London, March* 21, 1899.]

The undersigned, duly authorized by their Governments, have signed the following Declaration:—

Article IV of the Convention of the 14th June, 1898, shall be completed by the following provisions, which shall be considered as forming an integral part of it:—

1. Her Britannic Majesty's Government engages not to acquire either territory or political influence to the west of the line of frontier defined in the following paragraph, and the Government of the French Republic engages not to acquire either territory or political influence to the east of the same line.

2. The line of frontier shall start from the point where the boundary between the Congo Free State and French territory meets the water-parting between the watershed of the Nile and that of the Congo and its affluents.[2] It shall follow in principle that water-parting up to its intersection with the 11th parallel of north latitude. From this point it shall be drawn as far as the 15th parallel in such manner as to separate, in principle, the

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[1] See *Partition of Africa*, No. 89 of this series.

[2] This point is the source of the Mbomu river, practically on 5° of north latitude and about 27° 50′ east longitude.

Kingdom of Wadai from what constituted in 1882 the Province of Darfur; but it shall in no case be so drawn as to pass to the west beyond the 21st degree of longitude east of Greenwich (18° 40′ east of Paris), or to the east beyond the 23rd degree of longitude east of Greenwich (20° 40′ east of Paris).

3. It is understood, in principle, that to the north of the 15th parallel the French zone shall be limited to the north-east and east by a line which shall start from the point of intersection of the Tropic of Cancer with the 16th degree of longitude east of Greenwich (13° 40′ east of Paris), shall run thence to the south-east until it meets the 24th degree of longitude east of Greenwich (21° 40′ east of Paris), and shall then follow the 24th degree until it meets, to the north of the 15th parallel of latitude, the frontier of Darfur as it shall eventually be fixed[1].

4. The two Governments engage to appoint Commissioners who shall be charged to delimit on the spot a frontier line in accordance with the indications given in paragraph 2 of this Declaration. The result of their work shall be submitted for the approbation of their respective Governments. . . .

Done at London, the 21st March, 1899.

SALISBURY.
PAUL CAMBON.

III

TREATY BETWEEN GREAT BRITAIN AND ETHIOPIA.

[*Signed at Addis Abbaba, May* 15, 1902.]

Art. I. The frontier between the Sudan and Ethiopia agreed on between the two Governments shall be: the line which is marked in red on the map annexed to this Treaty, and traced from Khor Um Hagar to Gallabat, to the Blue Nile, Baro, Pibor, and Akobo rivers to Melile, thence to the intersection of the 6th degree of north latitude with the 35th degree longitude east of Greenwich.

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[1] This frontier was delimited by the Supplementary Convention of the 8th September, 1919 (see above, p. 4). The Convention adds: "It is understood that nothing in this Convention prejudices the interpretation of the Declaration of the 21st March, 1899, according to which the words in Article 3 '. . . . shall run thence to the south-east until it meets the 24th degree of longitude east of Greenwich (21° 40′ east of Paris)' are accepted as meaning '. . . . shall run thence in a south-easterly direction until it meets the 24th degree of longitude east of Greenwich at the intersection of that degree of longitude with parallel 19° 30′ of latitude.'"

Art. II. The boundary, as defined in Article I, shall be delimited and marked on the ground by a Joint Boundary Commission, which shall be nominated by the two High Contracting Parties, who shall notify the same to their subjects after delimitation.

Art. III. His Majesty the Emperor Menelek II, King of Kings of Ethiopia, engages himself towards the Government of His Britannic Majesty not to construct, or allow to be constructed, any work across the Blue Nile, Lake Tsana, or the Sobat which would arrest the flow of their waters into the Nile except in agreement with His Britannic Majesty's Government and the Government of the Sudan.

Art. IV. His Majesty the Emperor Menelek II, King of Kings of Ethiopia, engages himself to allow His Britannic Majesty's Government and the Government of the Sudan to select in the neighbourhood of Itang, on the Baro river, a block of territory having a river frontage of not more than 2,000 metres, in area not exceeding 400 hectares, which shall be leased to the Government of the Sudan, to be administered and occupied as a commercial station, so long as the Sudan is under the Anglo-Egyptian Government. It is agreed between the two High Contracting Parties that the territory so leased shall not be used for any political or military purpose.

Art. V. His Majesty the Emperor Menelek II, King of Kings of Ethiopia, grants His Britannic Majesty's Government and the Government of the Sudan the right to construct a railway through Abyssinian territory to connect the Sudan with Uganda.

A route for the railway will be selected by mutual agreement between the two High Contracting Parties.

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NOTE.—There is also much ethnographical information in some of the works already mentioned in Bibliography (1); above all, in Gleichen's *Anglo-Egyptian Sudan* and the two official handbooks to the Bahr el-Ghazal and Kordofan.

MAPS

A map of Anglo-Egyptian Sudan, on the scale of 1:3,000,000 (G.S.G.S., No. 2692), was published by the War Office in July 1914. Alterations in the north-western frontier, separating Anglo-Egyptian Sudan from the territories of France and Italy, being under discussion, the frontier in this direction (as marked in the map) must be regarded as temporary.

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