

THE SUDAN.¹

THE Sudan, in the broadest sense of the word, is bounded on the north by the Sahara, and on the south by the 5th degree of north latitude, except in the Nile region, where its southern limit may be fixed somewhat farther south. Between these boundaries, it stretches from the Atlantic Ocean to the highlands of Abyssinia and the Red Sea. The Sudan, as the word is commonly used at the present day, is the Egyptian Sudan properly so called, or the provinces belonging to Egypt lying south of the Nubian desert. These are, going from west to east, Dongola, Berber, and Suakin on the north; Darfur, Kordofan, Khartum and Senaar, Taka and Massawa, situated, roughly speaking, between 10° and 15° north latitude; and the southern Nile provinces of Fashoda, Bahr-el-Gazelle, and Equator. On many maps, however, the word 'Nubia' will be found as including all the Nile provinces as far south as Fashoda.

There is very little known of the history of this part of the world, but the following may be taken as approximately correct. The aboriginal inhabitants of these countries were undoubtedly negroes. It is not probable that the Arabs arrived much before the advent of Mohammed; but, in the eighth century of our era, one or more Arab tribes crossed the Red Sea, and settled in the Sudan as far west and south as Senaar. They became more or less amalgamated with the negro tribes, which they conquered and converted, and whose names they in many cases took. Thus it came about that the eastern Egyptian Sudan possesses at this day a reasonably homogeneous, impure Arab population, composed of the Hadendoa, Bishareen, and other tribes.

Kordofan lies approximately between 12° and 16° north latitude, and 29° and 32° east longitude. It contains a population of not over three hundred thousand. The Nouba (Nuba), a race of very black negroes, are not unlikely the representatives of the aborigines. They live by themselves in the mountains of southern Kordofan, and speak a language of their own. They are pure negroes. Between them and the Arabs there are two mixed races, the Ghodiat and Koungarra. It has been conjectured that the Ghodiat represent the ruling race at the time of the conquest of the country by the Fur, with whom the Koungarra seem to be allied; but this is largely conjecture.

These tribes live in villages, and cultivate the soil. They are thus easily distinguished from the purer Arab tribes, the most numerous of which are the Kababish and the Bagarra, all of whom are real nomads. With the exception of the Nouba, the Kordofanese are Mussulmans, and very superstitious.

Kordofan was conquered by the chief of Senaar in the last quarter of the eighteenth century, and almost immediately wrenched from his grasp by the forces of the sultan or chief of Darfur, who retained possession of the country until the Egyptian invasion in 1821. Perhaps the following from Major Prout's report to Stone pasha will convey a good idea of the mixture of races in Kordofan, where, he says, to-day one may see "all the variety of face, form, and color, which is to be found from Italy to the land of the Niam-Niam."

These and other disturbances in the Sudan attracted the attention of Mohammed Ali in 1819, and he sent an army for its subjugation. This was easily accomplished, so far as Nubia, Kordofan, and Senaar were concerned; but the Red Sea littoral, Suakin and Massawa, was not incorporated until 1864. The cruelties of Ismail, Mohammed Ali's son, were so great that he and many of his officers were treacherously burned alive at Shendy; while the defterdar, his son-in-law, so misgoverned Kordofan that it is said that Mohammed Ali had him poisoned. This was the beginning of Egyptian rule in the Sudan, and its promise has been borne out by succeeding events.

In 1853 John Petherick, the English consul at Khartum, opened up the ivory trade of the White Nile. Other foreigners followed. It was soon found that slave-hunting was still more profitable, and their energies were accordingly turned in that direction. Seribas, or stockaded villages, were built throughout the Bahr-el-Gazelle country; but "about the year 1860 the scandal became so great that the Europeans had to get rid of their stations." They sold them to the Arabs, who paid a nominal rental to the government. The life of the Nubians and other Arab peoples under the oppression of the Turks, as they called the Egyptians, was so miserable, that whole communities betook themselves to slave-hunting. From Berber to Khartum "there was not a dog to howl for his lost master. . . . Thousands had forsaken their homes, and commenced a life of brigandage on the White Nile." Thus wrote Baker in 1869, and to the same effect Schweinfurth a year earlier.

It was to put a stop to this slave-hunting that Baker, and after him Gordon, were ap-

¹ It was originally intended to give this article to the readers of *Science* in No. 93, in which the map of the Sudan appeared, but it could not be prepared in time. — Ed.

pointed governors of the equatorial Nile basin. They succeeded in stamping out the trade in the province of Equator, which was annexed to Egypt in Baker's time. This province was inhabited exclusively by pure negroes; while Bahr-el-Gazelle, where Schweinfurth lived so long, contained a large number of Arabs of more or less pure blood.

Baker and Gordon undoubtedly suppressed the slave trade of the White Nile, so far as it was carried on by water; but how much the poor slave was benefited is another question. Probably not much; for the overland march through Darfur and Kordofan must have been more destructive of life than even the voyage in a crowded Nile nugger.

One of the most powerful of these ruffian kings of Bahr-el-Gazelle was Seebehr Rahama, whose seribas were near the Darfur boundary. It was during Schweinfurth's stay in the Bahr-el-Gazelle country that Seebehr attacked and defeated some government troops who had been sent to take possession of a portion of southern Darfur. Seebehr himself then undertook the conquest of that country. The Egyptian government, thoroughly alarmed at his growing power, sent an army to co-operate, and Darfur was annexed to Egypt. This was in 1874.

Darfur, the land of the Fur, is situated between 9° and 16° north latitude, and 22° and 28° east longitude. Its area is about one hundred and five thousand square miles. Very little is known of the country; but the following facts, gleaned from Dr. Nachtigal's communication to the French geographical society in 1876, may be of interest. The population, estimated at about four millions, is as mixed as that of the other central Sudan provinces. The Fur, who live in the highlands, speak a language of their own. They are stigmatized by Nachtigal as proud, vain, cowardly, treacherous, and as disagreeable as the Wadai on the west. They are black, of moderate height, with regular features, and were the ruling race in Darfur before the coming of the Egyptians. There, as in Kordofan, there are many mixed races, and a large Arab population, especially in the northern and central portions. It must be remembered that these Arabs of the Sudan are not true Arabs, but to a great extent merely Arabized negroes.

After Seebehr had conquered Darfur, he went to Cairo for his reward; but, instead of being loaded with honors, and sent back as governor of Darfur, he was made a pasha, and kept in Cairo on a pension. His followers, led by his son Suleiman, in accordance with a preconcert-

ed arrangement, rebelled; but Seebehr was not sent to quell the rebellion, as he had expected. The revolt was crushed by Gordon's able lieutenant, the lamented Gessi pasha, who became governor of Bahr-el-Gazelle. But upon Gordon's withdrawal, all power to do good was taken from Gessi, and he resigned.

In 1877 the khedive entered into an agreement with England, in which it was stipulated that the slave-trade should cease in lower Egypt on Aug. 4, 1884, and in the Sudan five years later. The rebellious spirit of the inhabitants had been suppressed by Baker, Gordon, and Gessi. It broke out again on the favorable opportunity which the revolt of Arabi pasha afforded. Mahomet Achmet, or El Mahdi, put himself at the head of the movement. A series of defeats was suffered by the government troops. Then came the worst blunder of all. A portion of Arabi's bashi-bazouks were sent to the Sudan under the command of Hicks pasha, a retired English army-officer. At first they were successful; but, when they attempted the invasion of Kordofan, they were surrounded, and cut to pieces. The Mahdi and his followers were supreme except in the immediate vicinity of a few garrisoned towns. It was at this juncture that Gordon was sent by the English government to report on the military situation in the Sudan. On his way he stopped at Cairo, and was commissioned governor-general of the Sudan without pay. His doings there are not known. It will be curious to see, whether when he again turns up, he still adheres to the following opinion, which he wrote just before setting out: "I am convinced that it is an entire mistake to regard the Mahdi as in any sense a religious leader: he personifies popular discontent."

NAVIGATION OF THE AIR.¹

WE have described in detail (*Science*, No. 86) the experiment made at Chalais-Meudon on Aug. 9, when for the first time a balloon returned to its point of departure.

In 1852 Mr. Henry Giffard, in a steam-screw balloon, obtained a speed of about 4 metres a second. In 1872 Mr. Dupuy de Lôme, with a motor worked by seven men, attained a speed of 2.8 metres; and the Tissandier brothers, with the first balloon furnished with an electric motor, a speed of 3 metres in 1883, and of nearly 4 metres in 1884.² Renard and

¹ From an article by GASTON TISSANDIER in *La Nature*, Nov. 15.

² By an experimental trip on Sept. 26, 1884, the brothers Tissandier proved that their balloon could be brought back to its starting-point in calm weather; but, through lack of funds, they