FROM ALGERIA TO THE FRENCH CONGO.*

By M. F. FOUREAU.

[AFTER a brief introduction describing the origin and organization of his recent journey across the Sahara, towards the expenses of which the proceeds of the Orgeries legacy were voted by a committee of the Paris Geographical Society, M. Foureau proceeded as follows:—]

All having been satisfactorily arranged, we left Sedrata, the final point of departure, on October 23, 1898. Besides its leader, the mission included four civilians, MM. Dorian, Villatte, Leroy, and Du Passage; while in addition to its commander, Major Lamy, the escort comprised Captain Reibell, and nine other officers, including Drs. Fournial and Haller. The force numbered about 280 men at starting, and the convoy of camels more than 1000.

I will not stop to describe in detail the various branches of scientific work carried out during the course of the expedition. Suffice it to say that I executed a route-survey of the whole line of march, took 512 astronomical observations for the fixing of the more important positions, and made a collection of geological specimens which will throw light on the structure of the regions traversed. The results, together with those relating to meteorology, botany, and ethnography (the two last the more special work of Dr. Fournial, assisted by Dr. Haller), will eventually be published.

Passing over our journey across the great dunes, our stay at Timassanin, and our march across the northern Tassili, I will take up my story at Ain El-Hajaj, the point at which our actual plunge into the unknown began. The route pointed out by the Azjer led by the Wad Samene, but before taking this we examined the country to prove whether no feasible passage existed more to the west. We then attacked the mountain *massif* of Tindesset, the crossing of which occupied four days, rendered memorable by the difficulties of the route. Frowning peaks of sandstone blackened by the weather rose before and around us, and in these grand but gloomy surroundings we seemed like an army of ants attacking one of the pyramids of Egypt. Everywhere were rugged ravines, while a fine cascade—waterless, of course—dropped some 70 feet from its rocky ledge to the lower basin of the Wad Angarab. This rocky chaos ends suddenly to the south in a giddy descent, by which a zigzag, rock-strewn, path leads down to the plain below. We pitched our camp in the Wad Ujidi, at the foot of some high masses of rock covered with ancient Tuareg inscriptions, while close by were some

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enormous tombs, which the native legends report to contain treasures. Still passing through a mountainous but easier country, we reached Afara, a spot dominated by the high southern escarpment of the Tassili, where (on January 1, 1899) we experienced a frost which might have made us suppose we were in France. The cliff stretched its fantastic outline along the whole northern horizon, presenting the appearance of cathedrals, obelisks, towers, and all sorts of enormous structures with geometrical outlines.

Here we were joined by our two Tuareg guides, and though the information as to the watering-places on our way was far from clear, we felt that we were really *en route* for Air. We soon began the passage

OUR VANGUARD ON THE TINDESSET.

of a mountainous region called Anahef, composed entirely of quartz and granite, and formed by a series of mountain ranges and rugged plateaux cut by river-beds strewn with rocks. Crossing here the line of partition between the basins of the Mediterranean and Atlantic, we camped at a spot called Tadent, whence, with Lamy, Dorian, and Leroy, I made a five days' excursion to the well of Tajenut, the scene of the massacre of Colonel Flatters and his companions. This excursion proved very trying, both from the rapidity of our march and from the difficulties of the country and the want of water. We passed through the wild and imposing gorges of the Obazzer river, and crossed a region of schists and granite, the sad and desolate aspect of which can scarcely be imagined. The vast masses of Zerzaro, Sodderai, and Serkut rose with seamed and jagged surface above the barren and inhospitable plateau.

From Tadent we soon reached the interminable plain so well likened by Barth to a rock-strewn sea, which the Tuareg call Tiniri. The level expanse of quartz gravel is strewn with blocks of granite, rocky

bosses, and bare and arid lines of hills, the whole devoid of water and vegetation. The camels dropped one after another, adding their bones to the many which mark this terrible track, on which we seemed to be always marching without ever reaching our destination. At last, however, we did reach In-Azaua, where, owing to the mortality among our animals, we were forced to leave a portion of our loads, more especially as we had just received a convoy of dates escorted by Lieut. de Thézillat, who here joined our party. Fifty men of our escort were left with the baggage in a stone fort, to wait until they should be fetched away by Major Lamy. At In-Azaua, which has taken the place of the celebrated well of Assiu, now dry, the last link binding us to France was broken, the last couriers sent after us by Captain Pein reaching us here, and taking back our last despatches for the north. Apart from two official telegrams which reached us at Zinder, I received no news from home until seventeen months later on arrival at Brazzaville.

GORGE OF THE OBAZZER.

A march of eleven days brought us to Iferuane, the first village of Air, situated in the valley of Irhazar, one well only, that of Taghazi, having replenished our water-supply in the interval. The country consists chiefly of quartz, granite, and gneiss, often presenting rounded shapes. It is intersected by broad river-beds, all directed towards the west, and to these the vegetation is confined. Gazelles and antelopes are abundant in them. The inhabitants of Iferuane, which is an unimportant village with a few gardens and palm trees, are Kel-Ui Tuareg, and their slaves. The chief, El Haj Mohammed, who remembers both Barth and de Bary, received us courteously. He showed me a piece of carpet which I had presented some years before to Gidassan, sultan of the Azjer.

East of Iferuane rises a chain of high mountains, named Timge or Tengek, composed of steep, rugged, and bare peaks, furrowed by deep and narrow valleys. In the morning and evening these mountains displayed marvellous colouring, affording us a splendid panorama.

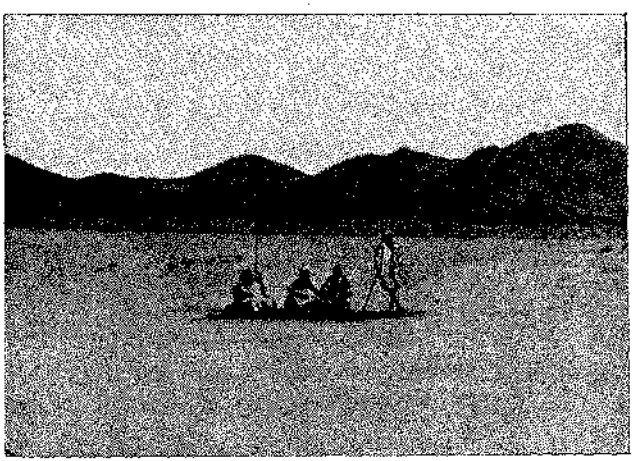
We were now in great straits for want of baggage animals. Major Lamy, who had returned to In-Azaua to fetch on the detachment left there, was obliged to burn a large quantity of barter goods, dates, etc., a necessity which unfortunately recurred, for our stock of camels was melting away like wax. On March 12 an attack was made on our camp by a band of 400 to 500 Tuaregs, who were, however, beaten off with loss, and we gained possession of some animals abandoned by them. Our provisions were likewise exhausted, and it was with difficulty that we could procure millet or sorghum—which, with the flesh of the sick camels and occasionally a little milk or cheese, formed our only food. At this period (March, April, May) dry tornadoes were frequent, and the heat great. To wait would have involved death from starvation, so we decided to make a step forward, taking with us all that our remaining animals could carry, while the rest of our goods were left under the charge of Captain Reibell, with a portion of the escort. On May 26 we reached, after a march of some 30 miles, the village of Agellal, situated at the foot of one of the Air ranges, at a point where the narrow mountain ravines spread out into a wide river-bed covered with fine gum acacias. Here we pitched our tent in an impregnable position on a sort of island formed of granite blocks. The village had been abandoned, its inhabitants having taken part in the attack on our camp. Some camels and other animals, belonging either to them or to other tribes implicated, fell into our hands during reconnaissances made in the neighbourhood. During one of these, a part of our escort was attacked by a body of 700 to 800 Tuareg, who were, however, soon put to flight. On the body of one of the slain we found a Koran containing some fragments of paper, which, from the figures and characters written on them, had undoubtedly belonged to the traveller, Erwin de Bary.

Thanks to the captures thus made, our camp was now a veritable menagerie, but besides meat we had still no food, and it was necessary to move on. On June 11 Major Lamy brought in the detachment from Iferuane, but, our remaining animals being insufficient for the transport of our goods, we were compelled to sacrifice all that was not absolutely indispensable. Clothes, beds, tents, books, photographic apparatus, etc., etc., were all burnt, a portion only of the powder and cartridges being kept. This having been done, we once more set ourselves in motion, and, after a slow and painful march of ten days, reached the village of Auderas. Here, in spite of friendly letters sent by various chiefs of the Kel-Ui, we were still unsuccessful in our attempts to obtain animals. Our immediate needs were met by a supply of food sent for sale by the sultan of Agadez, who would have liked us to continue our route to the south without passing his capital. We thought otherwise, so, after a halt of seventeen days, we decided to march on Agadez, after having, on July 14, in spite of our painful circumstances, organized a *fête* for our

escort. Songs, recitations, and a burlesque acted by native *tirailleurs*, helped to fill up the programme.

We had now with us two Tuareg personages deserving particular mention. The one, Akhedu by name, rendered us great services as interpreter and go-between, both at Auderas and Agadez. The other, named Mili-Menzu, was the chief vizier of the sultan of Agadez, a trustworthy and energetic man, who always showed the greatest devotion to us, and acted as our chief guide from Agadez to Zinder, besides doing other valuable work.

Between Auderas and Agadez the way leads first among the mountains, with a hard and rocky soil, and some rather difficult passes. Afterwards the lines of granitic hills become lower, and are separated by verdant valleys in which the dum palm is the principal tree. The



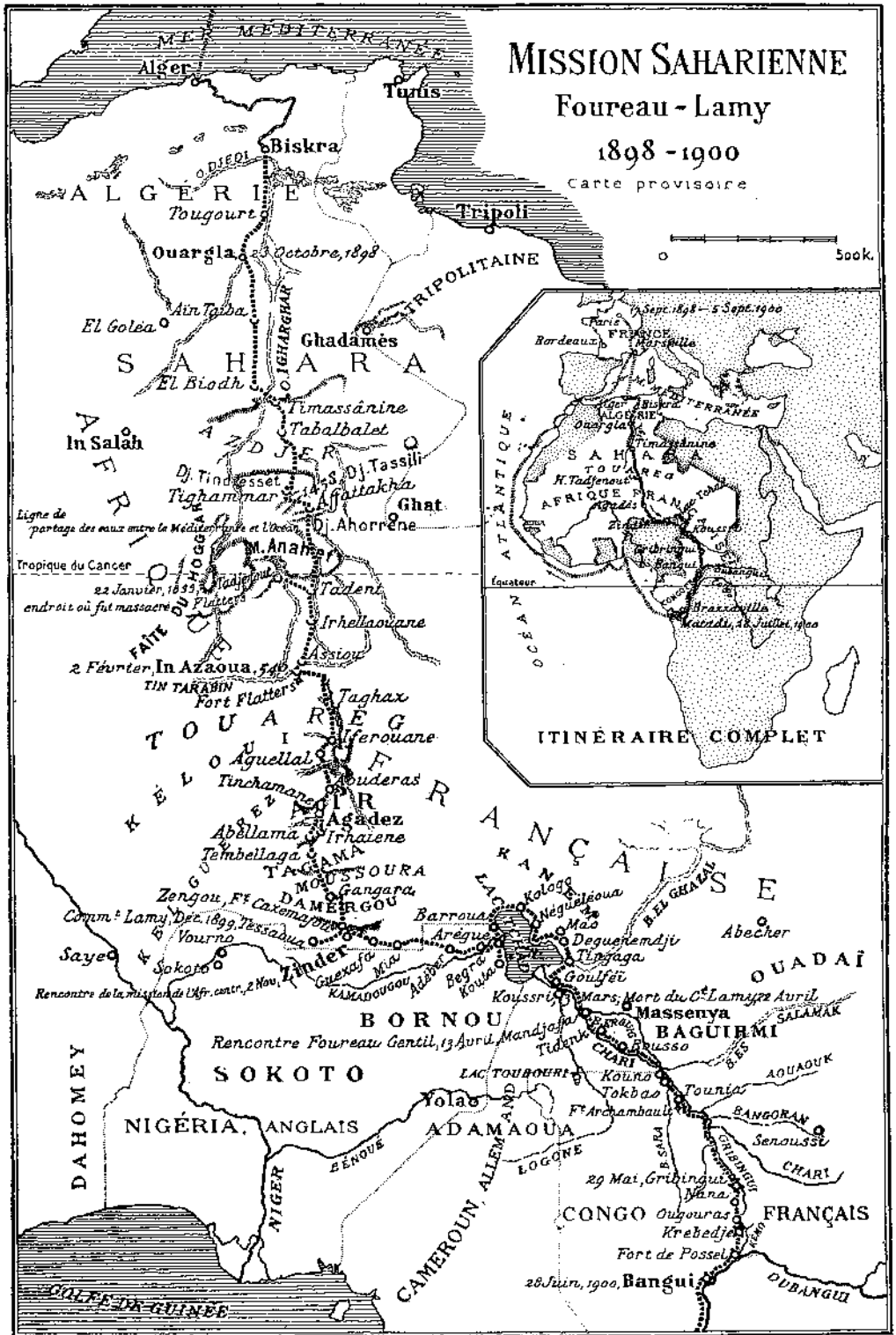
TUAREG GUIDES.

country becomes more and more open, forming a plain, more or less covered with gum-trees, in which Agadez is placed. We arrived there on July 28, and pitched our camp on a small rising ground, in the centre of which is a copious well named Tinshamane. The town has a dreary appearance. Its area is considerable, but more than half is covered by ruined houses. Those which are intact are built of clay, and many have an upper story. A few are quite stylish, all of these belonging to people from Tuat or Tripoli. The abode of the sultan, which has an upper storey pierced by small regular windows, has no architectural merit. It is a massive building, and the projecting beams of the different floors give it an odd bristling appearance. Near it is the mosque, the high minaret of which still remains as in Barth's time.

A market soon sprang up just outside our camp, at which were sold, in addition to a few oxen now and then, a large number of sheep and

goats, guinea-fowl, poultry, pigeons, ground-nuts, millet flour, dry cheeses, beans, a little sour milk, and some excellent tobacco brought from Kano and Katsena. In spite of the sultan's protestations of friendship, our daily supply of millet was obtained with the greatest difficulty, and threats had constantly to be employed. We obtained from the sultan a few camels and donkeys, but, finding that his power was extremely limited, and shared with other important chiefs, we decided to set out with the supplies we had for Zinder, whither we directed our course on October 10. The sultan supplied us with a guide, who, we were told, would conduct us each day to a water-supply. We were soon undeceived, however, for at the first halt we found only enough water to give a glassful to each man, and none at all to the animals, while the next day pools of rain-water were only found after a long search, near the hills of Irhaien. Our guide seemed to be purposely leading us gradually round to the north, and there was nothing for it but to make our way back to Agadez, where we arrived after an absence of ten days, during which the position had been more dangerous than ever before. This march, made under a high temperature by men heavily loaded, without a drop to drink, and mostly walking barefoot, has hardly a parallel in the history of exploration.

We were now in a sorry plight, and the ragged condition of our *tirailleurs* almost beggars description. Our second stay at Agadez brought no change in the attitude of the local authorities. Vigorous measures were necessary, and our end was only attained after the seizure, by our escort, of the two wells which supply the town, upon which we obtained a hundred camels and a few donkeys. We finally left Agadez, under the guidance of Mili Menzu and one or two others, on October 17, 1899, making our way by long and rapid marches across the districts of Azauakh and Tagama. Azauakh is a desert zone, bare and arid, marked by small outcrops of reddish sandstone. Tagama, which in the Tuareg language means forest, is everywhere covered with bush of greater or less density, broken here and there by treeless patches. These, as well as the ground beneath the trees, are carpeted with *gramineæ*, the most abundant species, named karenjia, being greedily eaten by the animals, though quite a plague to travellers by reason of the invisible spines with which the covering of the seed bristles. The *karenjia*, to which Barth devotes several pages of his work, is met with as far as the lower Shari. The scrub consists chiefly of dwarf gum-bushes, with here and there larger trees, especially a leafy species of *Ficus*, closely resembling the chestnut in appearance. The abundance of game in Tagama is incredible. It includes three or four varieties of antelope, wild boar, lions, giraffes, partridges, guinea-fowl, etc., many of them very tame. Damergu is much more open than Tagama, displaying small patches of wood and immense fields of millet, which had been reaped at the time. At Gangara, a large village in Damergu, we joined



SKETCH-MAP OF ROUTE OF FOUREAU-LAMY MISSION. REPRODUCED FROM *LA GÉOGRAPHIE*.
SCALE 1 : 20,000,000, ABOUT 312 MILES = 1 INCH.

our vanguard, which had preceded us by two days under Major Lamy, and then, after passing through several other villages, arrived at Zinder. By this time our numbers had been swelled by the addition to our company of many negro women, mostly slaves who had fled from their masters in the hope of regaining their homes, and of whom many found fathers, mothers, and brothers in various villages of the Sudan. Most had attached themselves temporarily to many of our *tirailleurs*, whose board and duties they shared.

At Zinder we found a detachment of 100 Senegalese under the command of Sergeant Bouthel, who formed the garrison of the place. They were the only remains of the Voulet mission, Lieut. Pallier having started for the Senegal, while Lieuts. Joalland and Meynier had proceeded to Lake Chad a month before our arrival. As our escort, ragged but full of ardour, filed before them, to the salute of the two flags and the bray of trumpets, it was a moving and inspiriting spectacle.

Zinder is a large and fine town, surrounded with high earthen walls very thick at the base and pierced with seven gates. The town covers a large area, and its houses are in part built of clay after the style of those of Jenne so well described by M. Dubois, in part of straw, and furnished with small courtyards enclosed with high mat walls. The palace of the *serki*, or sultan, occupies a large space, but is also built of clay, and has no artistic merit. The pleasing aspect of the town arises firstly from the variety of form of the houses and the irregularity of the ground, and secondly from the presence of trees and bushes, including the *alinka*, baobab and borassus palm, scattered at random over its area. A whole section is occupied by a pile of rocks and blocks of granite rising higher than the walls and commanding a fine view over the place. Outside, not far from the wall, is the French post, Fort Cazemajou, on a mound of huge granite blocks. It was presented to France by a Tuareg merchant, Mallem Yaro, a remarkable man who proved exceedingly well disposed, and rendered us valuable services. His present residence is at Zengu, the Tuareg suburb of Zinder. It serves also as a warehouse, and in it I saw, in the midst of cottons, silks, ostrich feathers, spices, etc., a variety of unexpected articles, such as French scent-bottles, Arab bon-bon boxes from Tunis, bottles of Hunyadi Janos water, and cages of live civets, from which the musk is extracted weekly.

It was through Mallem Yaro that I despatched a courier with letters for France on November 3, 1899. These despatches I supposed to be lost until, on October 23 last, they were placed in the hands of the French Consul-General at Tripoli, who obligingly forwarded them to me. They had thus taken a year to reach their address, but the fact that they did arrive shows the trustworthiness of Mallem Yaro's agents.

In front of one of the gates of Zinder there is a market formed of

rows of sheds divided into little shops. A little of everything, from cottons to tobacco, jewels, salt, kola-nuts, etc., is sold here, by negresses seated in parallel lines. The wares even include appetizing dishes of meat broiled on the spot. The scene at this market is an animated one, especially about four o'clock, when the going and coming is incessant. The scavenging of the town and market is the work of the numerous vultures, of a species distributed, like the various kinds of turtle-doves, throughout the whole country from Air to the Congo.

During our stay at Zinder, Major Lamy with half the escort carried out an expedition towards Tessaua, for the purpose of enforcing the obedience of certain recalcitrant chiefs. He collected, either as tribute or as fines, nearly 300 horses, and as we were also furnished with 100 camels, by a section of the Kel-Ui, we were in a position to continue our journey. I was pleased to find at Zinder a telegram from the Minister of Public Instruction, authorizing me to choose my own route for the return journey; and I did not hesitate a moment to order an advance eastward, as the original programme had in view, besides the crossing of the Sahara to the Sudan, the journey from the latter to Lake Chad and Kanem, and eventually the junction with M. Gentil on the Shari. On December 27 we performed the last obsequies for the remains of Colonel Klobb, which had been brought in by Major Lamy after his journey to Tessaua, as well as for those of Captain Cazemajou and his interpreter Olive, which had been previously rescued from a dry well into which they had been thrown.

On the 26th Major Lamy had set out with the first detachment, and on the 29th I followed with the remainder of our escort under Captain Reibell. We joined hands with the advance guard on January 9, 1900, at the villages of Adeber, and did the rest of the march together. The country, here named Manga, contains some fine villages. Thin bush alternates with clumps of trees and wide grassy plains, with numbers of swamps impregnated with carbonate of soda. These depressions are always surrounded with Dum palms. Much salt is extracted from the mud and water of these lakes, and is used throughout a large area. The producers do not cultivate the ground, but exchange the salt for millet. From Adeber we marched through grassy plains, dotted here and there with tamarinds, to the Komadugu Yobe, which contained a narrow stream of water, and of which the banks are everywhere covered with a thick belt of forest. At the village of Begra, on its banks, we found the sheikh Ahmar Sinda, son of the sultan of Bornu, dethroned by Rabah. We were present at his investiture as the new sultan of Bornu, in which a number of chiefs from all sides took part. He had just arrived from Zinder, and seemed to rely on our aid alone for the recovery of his throne. He never left our side, and was still with the escort when I finally left for France.

During all this time our supplies of food were extremely limited,

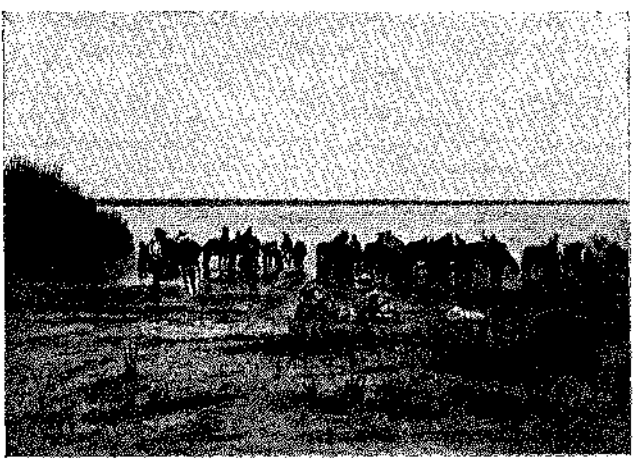
millet being very scarce in the salt-producing country. We often went hungry, and I well remember my delight at discovering one day, in a box of other articles, some small tablets of chocolate, which seemed to us, long deprived as we had been of sugar in our diet, as food fit for a king. Our wretched animals were still strewing their bones along the road, their only food being dry grass, which supplied very scanty nutriment; and in regard to food-supply, our situation became daily worse until we reached Kusri. All the villages along the Komadugu had been pillaged and burnt by the bands of Rabah, and heaps of human bones lay whitening on all sides. Even Kuka, the former flourishing capital of Bornu, with its hundred thousand inhabitants, had come off no better, being now nothing but a melancholy heap of ruins. Crumbling walls already covered with creepers, trees growing up in the interior of the houses, thousands of earthern jars, broken or whole, are all that meets the eye in the once proud queen of the Sudan.

It was on January 21, near the village of Arege, that I had my first view of Lake Chad. At this point the lake was fringed with reeds, but openings permitted a clear view of the open water gleaming in the sunlight, and enlivened with large numbers of birds. Above high-water mark the ground was cultivated with cotton, a little of which is generally seen in similar situations. Further south the road skirts the edge of the open water with no reed-barrier, and we observed a considerable swell, which indicated a certain depth. The water is fresh and good to drink. The area between Kuka and the lake, and the whole northern part of this region, abound in large game, including elephants, which showed themselves very tame. Our route now led in a circuit round the shores of the lake, and we passed by Barrua, Wadi, and Negigmi. The huts of this last village were intact, but had been abandoned by reason of the frequent raids of the Ulad Siman and Tebus. Further on we touched at the watering-place of Yarra, and beyond this at the village of Kologo.

Above high-water mark, round the whole north-west and north of Lake Chad, there is a continuous chain of gently sloping sand-hills covered with bush, and forming the virtual shores of the lake. The ground is everywhere strewn with the remains of huge fish, and the whitened bones of hippopotamus, crocodiles, and elephants. Game simply swarms, and on one occasion the troops of antelopes occupied more than ten minutes in galloping past our encampment. Giraffes, lions, and rhinoceros are also abundant. On the west side we had seen some canoes of the Chad islanders, the Buduma. These canoes are made of bundles of reeds tied closely together, and, though heavy, are unsinkable, albeit the crew are practically seated in the water. The form is that of an ordinary undecked boat, with an elevated prow. The Buduma are thorough-going banditti, making slaves of all the stragglers they can lay hands on to sell on the opposite shore.

Beyond Kologo our route took a decided bend to the south-east. We now left the shores of the lake proper, which here split up into a number of lagoons, running with winding contours far into the land, and compelling us to make wide *détours*. Not until the villages of Negelewa did we catch sight, and that for the last time, of the shining expanse of Chad, here studded with islands. Beyond this we entered Kanem, the principal oases of which lay to the east of us. At Degenemji, near Neguri and Mao, we fell in with Lieut. Joalland, who had come to meet us with thirty horsemen from his camp at Gulfei, on the Shari, to which a rapid march of five days now brought us. Our junction with the old Voulet mission was thus effected.

During these five days we had first to cross level plains, now covered



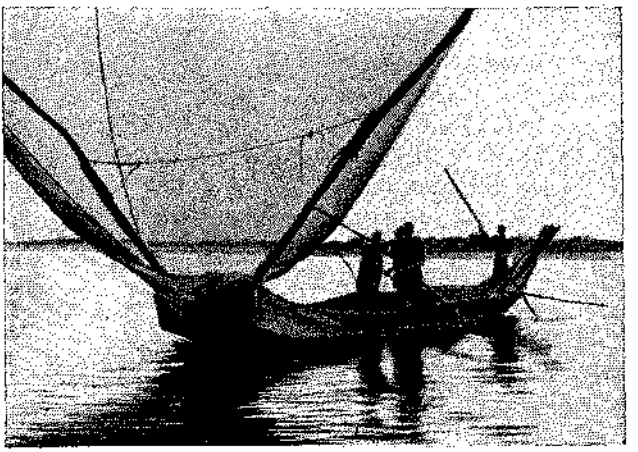
WATERING-PLACE AT YARRA, ON LAKE CHAD.

with tall dry reeds, but inundated in the wet season, and then to follow the margins of a series of lagoons, obscurely connected with the lake. Further on the plain became undulating, and was varied with patches of wood, with occasional large sycamore figs and numbers of the *teboraq*, a tree which we had constantly seen since reaching the northern Sahara, and which continued with us as far as about 7° N. The natives use its bark for soap, and eat the slightly bitter kernel of its fruit. In this march we had crossed the region named Bahr-el-Ghazal on our maps, which must not, however, be taken for a river, nor is it by any means an effluent of the lake, as some have imagined, but merely a sort of lagoon or narrow gulf, along which, according to native statements, the water, at times when the lake is unusually full, extends some 40 miles into the land. Beyond, the bush thickens, with clumps of large trees (tamarinds, etc.), while anthills are seen on all hands. The country is cut up by numbers of dry channels, with black soil fissured by deep and

wide cracks. It is plain that the whole is covered in the rainy season by an overflow from the Shari and the very numerous branches of its delta. The thickets are the haunt of game of all kinds, from guinea-fowl to rhinoceros, the latter being very abundant.

At Gulfei the Shari is a fine river, and although it was the season of low water, its bed had an imposing width. We stayed but a short time, but soon afterwards halted three days at Mara, where we crossed the river, the men passing over in canoes. The transport of our animals occupied nearly two days, and resulted in the loss of a certain number. On the other side we continued our way to Kusri, an important town at the junction of the Logone with the Shari. The place was strongly held by a detachment of Rabah's army when, on March 2, the expedition encamped within a few miles of it. After a night's march through the bush, Major Lamy made a brilliant assault, and took possession of the place at 3 a.m., the enemy losing heavily both in men, arms, and supplies.

Rabah and his forces were in occupation of Gulfei, Karnak-Logone, and Dikoa, but we received the most contradictory reports of his movements. His army was well organized, the marching regiments being supplied with information by mounted scouts. In battle, the guns and cartridges of the killed and wounded are collected by negro archers and lancers. The empty cartridge-cases are refilled by his armourers, and are very deadly when used. As soon as we were installed at Kusri, troops of natives began to arrive in large numbers, camping round the town, with the object of gaining our protection against Rabah. The number of these people who stationed themselves round Kusri in the space of a month may be estimated at at least 10,000 to 12,000, their flocks reaching a total of 157,000 head of oxen, sheep, and goats. They all belonged to the various sections of the Shuas—a light-skinned race of oriental origin, widely distributed throughout Bornu and on the eastern bank of the Shari. Their proper language is Arabic, which all speak more or less, though commonly using the speech of Bornu and Bagirmi. The women are well made, with delicate features, and show no appreciable trace of negro blood. Their hair is long, and divided into a number of fine tresses, while a larger one behind is sometimes formed into a coil. They all wear round the hips a number of strings of large white and blue beads. The towns of the lower Shari—Shaui, Gulfei, Mara, Kusri, Karnak-Logone, and some others—are inhabited by a race of fishers named Kottoko. These people are of a deep black, with woolly hair, but, though ugly (especially the women), are well-made. They fish both with nets and with the harpoon, and their canoes are made, for this purpose, extremely stable, about 40 feet long, and 5 or 6 feet broad at the stern, the bows running out to a high point. A huge net, supported by two enormous antennæ-like spars, is fixed at the stern and worked by a great lever. It is let down until it almost



FISHING-BOAT ON THE LOWER SHARI.

touches the bottom of the river, when the canoe is moved slowly along, the water being at the same time beaten by two boys in a smaller canoe. The net is then raised, and the fish fall into the large canoe. The rivers abound in fish, and the takes are usually good.

Kusri lies some 30 feet above the Logone, the houses reaching close to the bank. They are solidly made of clay, generally rectangular, but occasionally cylindrical, with thatched roofs supported by a framework of stout poles. Some of the rectangular form have upper stories, but all have very small entrances. Many possess beehives, arranged much after the fashion of those kept by the Kabyles of the Aures, and hives are also placed in trees, both in the towns and in the bush, where wild bees are very abundant.

We had not yet received replies to the despatches sent to M. Gentil, but had heard from Captain de Lamothe, who commanded his advance party, and who was now at Masere, a town of Bagirmi, not far from the old capital, Massenya. We thus learnt that the whole Gentil expedition was descending the Shari to join us. Meanwhile sixty camels and a score of canoes were sent by Major Lamy to M. Gentil to facilitate his advance. The Sahara expedition had finished its task, and its escort was henceforth at the disposal of the Government Commissioner for any military operations that might be deemed necessary. I therefore set out on April 2, with the canoes and thirty men, and on the 11th met M. Gentil at Manjafa. This meeting stirred us deeply, and nothing was wanting to the impressiveness of the occasion. Advancing through a country made known by his own efforts, Gentil was brought face to face with a compatriot who had set out from the opposite extremity of French Africa, and the last link of the chain connecting the Mediterranean with the Atlantic was now complete.

With an escort, canoes, and a guide kindly provided by M. Gentil, I resumed my ascent of the river on April 14, the Gentil expedition continuing its route to Kusri. For three months and a half I was entirely without news from my rear, and it was only at Brazzaville, on July 21, that I learnt the sad news of the death of Major Lamy. Not till much later, after my arrival in France, did I hear of the brilliant operations, conducted by Captain Reibell, which had led to the complete rout of the army of Rabah.

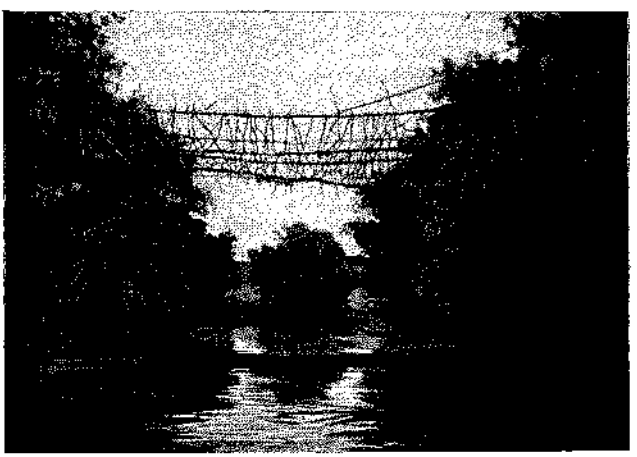
On my voyage up the Shari and Gribingi, which lasted fifty-six days, I had with me Vilatte and the four Shambas from Wargla, who had served us so faithfully ever since we left Algeria. The voyage was a monotonous one. The water was low, and we were at times reduced to the necessity of dragging our canoes over the shallows. Our slow rate of progress allowed the Shambas to land frequently for a hunt, and game was so abundant that our larder was kept constantly replenished. The rainy season was now beginning, and we were visited by frequent tornadoes, which raised big waves, and forced us to take refuge beside the bank. At these times the crew would jump overboard, remaining up to their necks in the water, and covering their heads with an inverted calabash until the storm abated; the reason for this behaviour being that the temperature of the water would be about 86° Fahr., while that of the rain would be scarcely higher than 75°.

Besides innumerable hippopotami, crocodiles, and antelopes, lions and rhinoceros occur in large numbers. Certain districts along the Shari swarm with elephants, and one night, when encamped on a sand-bank, we were surrounded for two hours by a whole troop of these animals, who paid little heed to our feeble camp-fires. Only a short time ago the banks of the river were lined with fine villages, but all

PASSING THE GRIBINGI RAPIDS.

had been destroyed by Rabah's forces. The inhabitants had in part dispersed over the bush, but some had built straw huts either on the shore or on sandbanks, whence they prosecute their avocation as fishers during the period of low water. Even at this season the Shari is a fine, wide river, whilst at high water it becomes a majestic stream, with a width, in places, of 4 to 5 miles. It spreads, besides, over the plains on either side, forming innumerable lakes and backwaters. The ultimate banks are marked by tall bush, which acquires a more tropical character the further south one ascends. Only one station—that of Tunia, or Fort Archambault—has been established on the stream.

On leaving the Shari proper and entering the Gribingi, the scene



SUSPENSION BRIDGE OVER THE GRIBINGI.

changes. The latter river hardly exceeds a width of 60 yards at the confluence, while at the Gribingi station it is little more than 20 yards wide. It is broken into various sections by rapids, which at the time of our passage carried very little water, and often involved difficult portages. At high water these spots are marked by violent eddies, due to the force with which the water dashes against the submerged rocks. The bush, which alternates with open spaces, is enlivened by a variety of birds and monkeys, while the river view is varied by precipitous rocks and sharp bends. The current is frequently obstructed by fishing-weirs, which the natives construct by throwing large trees across the stream, and fixing wicker traps in openings among the submerged branches. It was with difficulty that I could restrain my men from visiting these traps and appropriating their contents. On the upper course of the river we came upon several picturesque bridges, formed of lianas stretched between trees on either bank.

At the Gribingi station we left the canoes, and proceeded by land

for a distance of nearly 200 miles, I riding on an ox, while our baggage was carried by porters. The rains were now in full swing, the grass was green and very high, and we lived in a perpetual state of moisture. At Fort Possel, on the Ubangi, we again took to canoes, while the latter part of our voyage to Brazzaville was made by steamer. From Bangi onwards I had the benefit of the company of M. Bonnel de Mézières and M. Mercuri, the former from the sultanates of the Bahr-el-Ghazal, the latter from the upper Ubangi and the country of Senussi.

We everywhere met with the most cordial reception, and from Brazzaville had an easy journey by rail to Matadi, where I took ship for France, happy in the thought that my work was now accomplished.

EXPLORATION OF ANTARCTIC LANDS.*

By HENRYK ARCTOWSKI.

On Friday, January 14, 1898, the *Belgica* left St. John harbour in the morning, and obtained a sounding near the shore giving a depth of 162 fathoms; a second sounding later in the day gave a depth of 855 fathoms. Next day we lost sight of Staten island, and obtained a sounding of 2209 fathoms. This was our first discovery—an unknown depression lying close to the extremity of the Andes, the steep slope of the mountains being evidently continued under the sea. The prolongation of the great mountain chain is to be looked for to the east of Staten island, which forms the last fragment of the Andes; but in that case, what can we make of the Diego Ramirez islands south-west of Cape Horn? The latitude at which we had found the deep sounding was within a few minutes of that of the Cape, the exact position being 55° 51′ S. and 63° 19′ W. One is led to speculate as to whether the chain of the Andes does not open out like a fan, as so many other mountain chains do.†

On January 19, Commandant de Gerlache pointed out the ice-blink in the south. The sky was uniformly covered with a thin layer of stratus, and just at the horizon a white line appeared like a longitudinal slit, detaching itself by its brightness from the grey of the sky. It was discontinuous, a little undulated, not rising more than from 10′ to 25′ above the horizon. At 8 p.m. Lecointe reported the first iceberg, which appeared like a dome rising sharply out of the sea at a distance of about 10 miles. The soundings had given depths of 2105, 2078, and

* Personal narrative of the twenty landings on the lands discovered by the Belgian Antarctic Expedition.

† Arctowski, "The Bathymetrical Conditions of the Antarctic Regions" (*Geogr. Jour.*, July, 1899); and Arctowski, "Observations sur l'intérêt que présente l'exploration géologique des terres australes" (*Bull. Soc. Géol. de France*, 1895, p. 589).