

ON THE EDGE OF
THE PRIMEVAL FOREST

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BY THE SAME AUTHOR

**THE QUEST OF THE
HISTORICAL JESUS**

Translated by the
REV. W. MONTGOMERY, B.A., B.D.
With a Preface by PROF. F. C. BURKITT,
M.A., D.D.
Second Edition. Demy 8vo, cloth.
A. & C. BLACK, LTD., 4, SOHO SQ., LONDON, W. 1

**PAUL
AND HIS INTERPRETERS**
A CRITICAL HISTORY

Translated by the
REV. W. MONTGOMERY, B.A., B.D.
Demy 8vo, cloth.
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**THE MYSTERY OF
THE KINGDOM OF GOD**
THE SECRET OF JESUS' MESSIAHSHIP
AND PASSION
NEW YORK: DODD, MEAD AND COMPANY

J. S. BACH
Translated by ERNEST NEWMAN.
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FIG 1.—LUMBERMEN AND TIMBER-RAFTS AT THE MOUTH OF THE OGOWE.

ON THE EDGE OF THE PRIMEVAL FOREST

EXPERIENCES AND OBSERVATIONS OF
A DOCTOR IN EQUATORIAL AFRICA

BY

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his Interpreters," "J. S. Bach," etc.*

TRANSLATED BY

CH. TH. CAMPION

CONTAINING 16 ILLUSTRATIONS FROM
PHOTOGRAPHS, AND A SKETCH MAP

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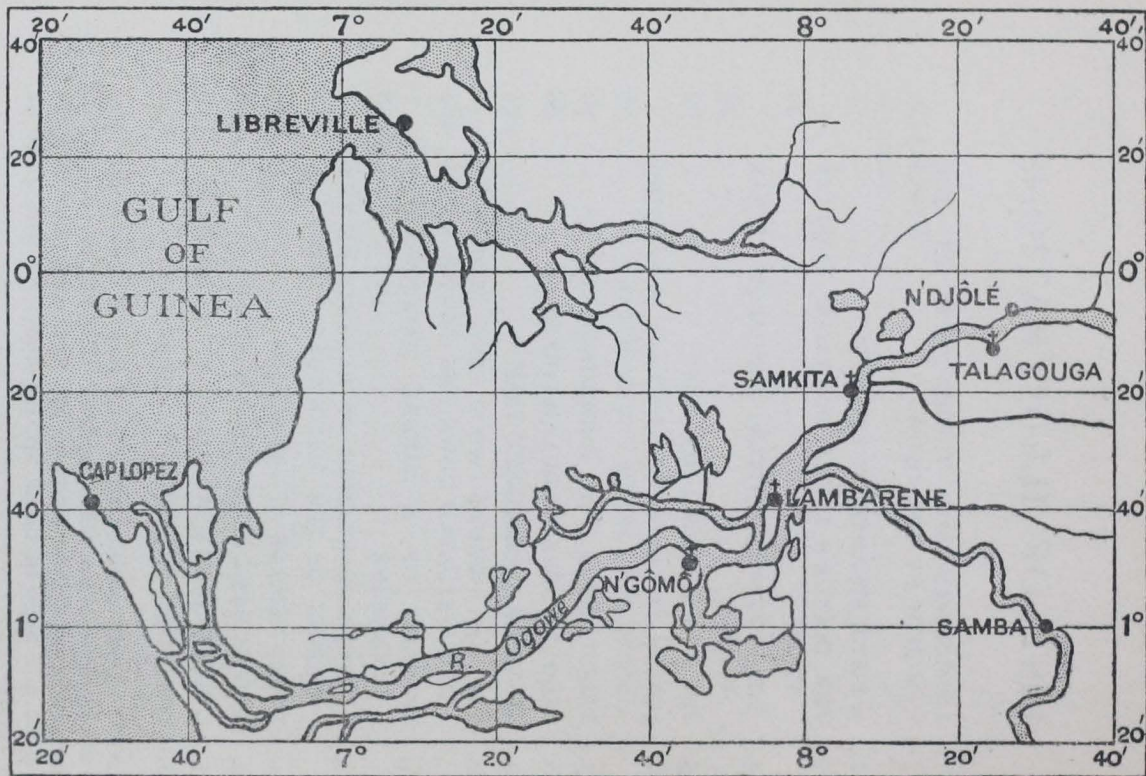
CONTENTS

CHAP.	PAGE
I. HOW I CAME TO BE A DOCTOR IN THE FOREST. THE LAND AND PEOPLE OF THE OGOWE .	I
II. THE JOURNEY	10
III. FIRST IMPRESSIONS AND EXPERIENCES .	29
IV. JULY, 1913—JANUARY, 1914	39
V. JANUARY TO JUNE, 1914	69
VI. LUMBERMEN AND RAFTSMEN IN THE PRIMEVAL FOREST	94
VII. SOCIAL PROBLEMS IN THE FOREST . .	111
VIII. CHRISTMAS, 1914	136
IX. CHRISTMAS, 1915	142
X. THE MISSION	153
XI. CONCLUSION	168

LIST OF ILLUSTRATIONS

FIG.		
I.	LUMBERMEN AND TIMBER-RAFTS AT THE MOUTH OF THE OGOWE . . .	<i>Frontispiece</i>
		FACING PAGE
2.	A RIVER STEAMER ON THE OGOWE . . .	21
3.	THE DOCTOR'S LITTLE BUNGALOW (DISTANT VIEW)	28
4.	THE DOCTOR'S LITTLE BUNGALOW (NEAR VIEW)	28
5.	THE HOSPITAL AT LAMBARENE	62
6.	JOSEPH, THE HOSPITAL ASSISTANT, BANDAGING SORES IN FRONT OF THE HOSPITAL . . .	76
7.	NEGRO CHILD WITH ABDOMINAL DROPSY . . .	76
8.	PAHOVIN BOYS FROM LAMBARENE	88
9.	STUMP OF A MAHOGANY TREE	101
10.	RAFT OF OKOUME WOOD AND MAHOGANY BEING FLOATED DOWN THE OGOWE RIVER . . .	104
11.	PREMISES OF A TIMBER MERCHANT AT LAMBARENE	108
12.	A LITTLE PLANTATION OF BANANAS ON THE MARGIN OF THE UNTOUCHED FOREST . . .	112
13.	NEGRO VILLAGE AT LAMBARENE	120
14.	ON THE BANK OF THE OGOWE RIVER	136
15.	A MISSIONARY'S BUNGALOW AT LAMBARENE . . .	149
16.	THE BOYS' SCHOOL AT LAMBARENE	156

Note.—I am indebted for a large part of the photographs to the kindness of a grateful patient. Illustrations Nos. 5 and 6 are based on a slide made by Mr. Ottmann. For illustration No. 3 I have to thank Mr. Pelot, and for Nos. 4 and 15 Mr. Morel.



SKETCH MAP OF THE LOWER COURSE OF THE OGOWE.

(Based on a map by the Rev. Mr. Haug.)

ON THE EDGE OF THE PRIMEVAL FOREST

CHAPTER I

HOW I CAME TO BE A DOCTOR IN THE FOREST. THE
LAND AND PEOPLE OF THE OGOWE

I GAVE up my position of professor in the University of Strasbourg, my literary work, and my organ-playing, in order to go as a doctor to Equatorial Africa. How did that come about ?

I had read about the physical miseries of the natives in the virgin forests ; I had heard about them from missionaries, and the more I thought about it the stranger it seemed to me that we Europeans trouble ourselves so little about the great humanitarian task which offers itself to us in far-off lands. The parable of Dives and Lazarus seemed to me to have been spoken directly of us ! We are Dives, for, through the advances of medical science, we now know a great deal about disease and pain, and have innumerable means of fighting them : yet we take as a matter of course the incalculable advantages which this new wealth gives us ! Out there in the colonies, however, sits wretched Lazarus, the coloured folk, who suffers from illness

and pain just as much as we do, nay, much more, and has absolutely no means of fighting them. And just as Dives sinned against the poor man at his gate because for want of thought he never put himself in his place and let his heart and conscience tell him what he ought to do, so do we sin against the poor man at our gate.

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The two or three hundred doctors whom the European States maintain as medical officers in the colonial world could undertake only a very small part (so I argued to myself) of the huge task, even if the majority of them were not there for the benefit, first of all, of the white colonists and the troops. Society in general must recognise this work of humanity to be its task, and there must come a time when doctors go out into the world of their own free will, but sent and supported by society and in numbers corresponding to the need, to work for the benefit of the natives. Then only shall we be recognising and beginning to act upon the responsibility in respect of the coloured races which lies upon us as inheritors of the world's civilisation.

Moved by these thoughts I resolved, when already thirty years old, to study medicine and to put my ideas to the test out there. At the beginning of 1913 I graduated as M.D. That same spring I started with my wife, who had qualified as a nurse, for the River Ogowe in Equatorial Africa, there to begin my active work.

I chose this locality because some Alsatian missionaries in the service of the Paris Evangelical Mission

had told me that a doctor was badly needed there on account of the constantly spreading sleeping sickness. The mission was prepared also to place at my disposal one of the houses at their station at Lambarene, and to allow me to build a hospital in their grounds, promising further to give me help with the work.

The actual expenses of the undertaking, however, I had to provide myself, and to that I devoted what I had earned by giving organ concerts, together with the profits from my book on Bach, which had appeared in German, French, and English. In this way the old Thomas Cantor of Leipsig, Johann Sebastian himself, helped me in the provision of a hospital for negroes in the virgin forest, and kind friends in Germany, France, and Switzerland contributed money. When we left Europe, the undertaking was securely financed for two years, the expenses—apart from the journey out and back—being, as I reckoned, about 15,000 francs* a year, and this calculation proved to be very nearly correct.

The keeping of the accounts and the ordering of all the things needed had been undertaken by self-sacrificing friends in Strasbourg, and the cases, when packed, were sent to Africa by the mission with their own.

My work then lived—to use a scientific term—in symbiosis with the Paris Evangelical Mission, but it was, in itself, undenominational and international. It was, and is still, my conviction that the humanitarian work to be done in the world should, for its accomplishment, call upon us as men, not as members of any particular nation or religious body.

* *I.e.*, about £600 p.a. at the then normal rate of exchange.

Now for a word about the country which was the scene of our labours. The Ogowe district belongs to the Colony of Gaboon, and the Ogowe itself is a river, 700 to 800 miles long, north of, and roughly parallel to, the Congo. Although smaller than the latter, it is yet a magnificent river, and in the lower part of its course its width is from 1,200 to 2,200 yards. For the last 120 miles it divides into a number of arms which enter the Atlantic near Cape Lopez, but it is navigable for fairly large river steamers as far as N'Djôle, about 250 miles up stream. At that point begins the region of hills and mountains which leads up to the great plateau of Central Africa. Here also begins a series of rapids which alternate with stretches of ordinary open river, and these rapids can only be surmounted by small screw steamers, built for the purpose, and by native canoes.

While along the middle and upper course of the Ogowe the country is a mixture of prairie and wood, there is along the lower part of the river, from N'Djôle downwards, nothing but water and virgin forest. This damp, low-lying ground is admirably suited for the cultivation of coffee, pepper, cinnamon, vanilla, and cocoa; the oil palm also grows well in it. But the chief business of Europeans is neither the cultivation of these things, nor the collection of rubber in the forest, but the timber trade. Now on the west coast of Africa, which is very poor in harbours, especially in such as have rivers discharging into them, conditions are very seldom favourable for the loading of timber cargoes. But the Ogowe has the great advantage of discharging into an excellent roadstead without any bar; the huge rafts can lie alongside the steamers

which are to take them away without danger of being broken up and scattered on a bar or by a heavy swell. The timber trade, therefore, is likely to be for an indefinite period the chief industry of the Ogowe district.

Cereals and potatoes it is, unfortunately, impossible to cultivate, since the warm, damp atmosphere makes them grow too fast. Cereals never produce the usual ear, and potato haulms shoot up without any tubers below. Rice, too, is for various reasons not cultivable. Cows cannot be kept along the lower Ogowe because they cannot eat the grass that grows there, though further inland, on the central plateau, they flourish splendidly. It is necessary, therefore, to import from Europe flour, rice, potatoes, and milk, a fact which makes living a complicated business and very expensive.

Lambarene lies a little south of the Equator, so that its seasons are those of the Southern hemisphere: winter when it is summer in Europe, and *vice versâ*. Its winter is characterised by its including the dry season, which lasts from the end of May to the beginning of October, and summer is the rainy season, the rain falling from early in October to the middle of December, and from the middle of January to the end of May. About Christmas one gets three to four weeks of continuous summer weather, and it is then that the thermometer record is highest.

The average shade temperature in the rainy season is 82°—86° F.,* in the dry season about 77°—82° F., the nights being always nearly as hot as the days. This circumstance, and the excessive moisture of the

* *I.e.*, 28° to 30° and 25° to 28° C.

atmosphere, are the chief things which make the climate of the Ogowe lowlands such a trial for a European. After a year's residence fatigue and anæmia begin to make themselves disagreeably perceptible. At the end of two or three years he becomes incapable of real work, and does best to return to Europe for at least eight months in order to recruit.

The mortality among the whites at Libreville, the capital of Gaboon, was, in 1903, 14 per cent.

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Before the war there lived in the Ogowe lowlands about two hundred whites: planters, timber merchants, storekeepers, officials, and missionaries. The number of the natives is hard to estimate, but, at any rate, the country is not thickly inhabited. We have at present merely the remains of eight once powerful tribes, so terribly has the population been thinned by three hundred years of alcohol and the slave trade. Of the Orungu tribe, which lived in the Ogowe delta, there are scarcely any left; of the Galoas, who belonged to the Lambarene district, there remain still 80,000 at most. Into the void thus created there swarmed from inland the cannibal Fans, called by the French Pahouins, who have never yet come into contact with civilisation, and but for the opportune arrival of the Europeans this warrior folk would by this time have eaten up the old tribes of the Ogowe lowlands. Lambarene forms in the river valley the boundary between the Pahouins and the old tribes.

Gaboon was discovered by the Portuguese at the end of the fifteenth century, and by 1521 there was a Catholic mission settlement on the coast between the

mouths of the Congo and the Ogowe. Cape Lopez is named after one of them, Odoardo Lopez, who came out there in 1578. In the eighteenth century the Jesuits had extensive plantations on the coast, with thousands of slaves, but they were as far from penetrating to the hinterland as were the white traders.

When, in the middle of the nineteenth century, the French and the English combined to fight the slave trade on the west coast, they chose, in 1849, the bay which lies north of that of Cape Lopez for the headquarters of their fleet, establishing there also a settlement to which they could send the rescued slaves: hence the name Libreville. That the narrow channels which empty themselves here and there into Cape Lopez bay belonged to a great river, the whites did not yet know, for the natives inhabiting the coast had withheld the information in order to keep the inland trade in their own hands. It was not till 1862 that Lieut. Serval, while on an excursion to the south-east of Libreville, discovered the Ogowe in the neighbourhood of Lambarene. Then began the exploration, from Cape Lopez, of the lower course of the river, and the chiefs were gradually brought to acknowledge the French protectorate.

When in the eighties the need was felt of finding the most convenient route for trade from the coast up to the navigable parts of the Congo, de Brazza believed that it was to be found in the Ogowe, since this river rises only some 125 miles north-west of Stanley Pool, and is separated from the Alima, a navigable tributary of the Congo, only by a narrow watershed. He even succeeded in getting to the Congo by this route a steamer which could be taken to pieces and transported by

land, but the route proved to be impracticable for trade on account of the difficulties caused by the rapids in the upper part of the Ogowe. The construction of the Belgian-Congo railway between Matadi and Brazzaville was finished in 1898, and this put a final end to any idea of making the Ogowe a way to the Congo. To-day the Ogowe is used only by the traffic which goes up to its own still comparatively unexplored hinterland.

The first Protestant missionaries on the Ogowe were Americans, who came there about 1860, but as they could not comply with the requirement of the French Government that they should give their school instruction in French, they resigned their work later on to the Paris Missionary Society.

To-day this society owns four stations: N'Gômô, Lambarene, Samkita, and Talagouga. N'Gômô is about 140 miles from the coast, and the others follow one another in that order at intervals of about 35 miles. Talagouga is situated on a picturesque island just in front of N'Djôle, which is the farthest point to which the river steamer goes.

At each Protestant mission station there are generally one unmarried and two married missionaries, and, as a rule, a woman teacher also, making five or six persons, without reckoning the children.

The Catholic mission has three stations in the same district: one in Lambarene, one in N'Djôle, and one near Samba, on the N'Gounje, the largest tributary of the Ogowe, and on each station there live about ten whites: usually three priests, two lay brothers, and five sisters.

The administrative officials of the district are

stationed at Cape Lopez, at Lambarene, at Samba, and at N'Djôle, with about five hundred coloured soldiers distributed over it to act as a police force.

Such was the country, and such the people among whom for four and a half years I worked as the forest doctor. What I experienced during that time and the observations I made previous to the outbreak of the war, I shall now describe with the help of the reports which I wrote every six months in Lambarene and sent as printed letters to my friends and supporters. During the war such correspondence was, of course, impossible, and for that later period and for what is said about the religious and social problems treated of, I rely on memoranda which I made for my own use.

CHAPTER II

THE JOURNEY

LAMBARENE, *July*, 1913.

THE church bells in my native Alsatian village of Günsbach, in the Vosges, had just ceased ringing for the afternoon service on Good Friday, 1913, when the train appeared round the corner of the wood, and the journey to Africa began. We waved our farewells from the platform of the last coach, and for the last time saw the *flèche* on the church tower peeping up among the trees. When should we see them again? When next day Strasbourg Cathedral sank out of sight we seemed to be already in a foreign land.

On Easter Sunday we heard once more the dear old organ of S. Sulpice's Church in Paris and the wonderful playing of our friend Widor. At two o'clock the Bordeaux train glided out of the underground station at the Quai d'Orsay, and we began a delightful journey. Everywhere we saw people in their holiday dress; the sunshine was brilliant, and the warm spring breeze brought out of the distance the sound of the village church bells, which seemed to be greetings to the train that was hurrying past. It was an Easter Day which seemed a glorious dream.

The Congo steamers do not start from Bordeaux but from Pauillac, which is an hour and a half by train nearer the sea. But I had to get my big packing case, which had been sent in advance by goods train, out of

the custom house at Bordeaux, and this was closed on Easter Monday. There would have been no time on Tuesday to manage it, but fortunately an official observed and was touched by our anxiety, and enabled me to get possession of my goods without all the prescribed formalities. But it was only at the last minute that two motor cars got us and our belongings to the harbour station, where the train was already waiting which was to convey the passengers for the Congo to their ship. The feeling of relief can hardly be described with which, after all the excitement and the payment of all those who had helped us off, we sank into our seats in the railway carriage. The guard blew his whistle; the soldiers who were also going took their places; we moved out into the open, and for a time had the enjoyment of blue sky and pleasant breeze, with the sight here and there of water, and yellow broom in flower, and cows quietly grazing. In an hour and a half we are at the quay among packing cases, bales, and barrels, ten yards from the ship, called the *Europe*, which is gently tossing on the somewhat restless waters of the Gironde. Then came a time of crushing, shouting, signalling to porters; we push and are pushed till, over the narrow gangway, we get on board and, on giving our names, learn the number of the cabin which is to be our home for three whole weeks. It is a roomy one, well forward and away from the engines, which is a great advantage. Then we had just time to wash before the bell rang for lunch.

We had at our table several officers, the ship's doctor, an army doctor, and two wives of colonial officials who were returning to their husbands after a voyage home to recruit. All of them, as we soon discovered, had

already been in Africa or in other colonies, so that we felt ourselves to be poor untravelled home birds. I could not help thinking of the fowls my mother used to buy every summer from Italian poultry dealers to add to her stock, and which for several days used to walk about among the old ones very shyly and humbly ! One thing that struck me as noticeable in the faces of our fellow travellers was a certain expression of energy and determination.

As there was still a great deal of cargo to come aboard we did not start till the following afternoon, when under a gloomy sky we drew slowly down the Gironde. As darkness gradually set in the long roll of the waves told us that we had reached the open sea, and about nine o'clock the last shimmering lights had disappeared.

Of the Bay of Biscay the passengers told each other horrid tales. "How I wish it were behind us !" we heard at every meal-time, but we were to make full proof of its malice. On the second day after starting a regular storm set in, and the ship pitched and tossed like a great rocking-horse, and rolled from starboard to port, and back from port to starboard, with impartial delight. The Congo boats do this more than others in a heavy sea because, in order to be able to ascend the river as far as Matadi, whatever the state of the water, they are of a comparatively shallow build.

Being without experience of ocean travel, I had forgotten to make the two cabin trunks fast with cords, and in the night they began to chase each other about. The two hat cases also, which contained our sun helmets, took part in the game without reflecting how badly off they might come in it, and when I tried to catch the trunks, I nearly got one leg crushed between them and

the wall of the cabin. So I left them to their fate and contented myself with lying quietly in my berth and counting how many seconds elapsed between each plunge made by the ship and the corresponding rush of our boxes. Soon there could be heard similar noises from other cabins and, added to them, the sound of crockery, etc., moving wildly about in the galley and the dining saloon. With morning came a steward, who showed me the scientific way of making the baggage fast.

For three days the storm lasted with undiminished force. Standing or even sitting in the cabins or the saloons was not to be thought of; one was thrown about from one corner to the other, and several passengers received more or less serious injuries. On Sunday we had cold food only, because the cooks were unable to use the galley fire, and it was not till we were near Teneriffe that the storm abated.

I had been looking forward to the first sight of this island, which is always said to be so magnificent, but, alas! I overslept myself and woke only as we were entering the harbour. Then, scarcely had the anchor been dropped, when we were hemmed in on both sides by coaling-hulks from which were hoisted sacks of food for the engines, to be emptied through the hatches into the ship's hold.

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Teneriffe lies on high ground which slopes rather steeply into the sea, and has all the appearance of a Spanish town. The island is carefully cultivated and produces potatoes enough to supply the whole coast

of West Africa, besides bananas, early potatoes, and other vegetables for Europe.

We weighed anchor about three o'clock, and I stood in the bows and watched how the anchor slowly left the bottom and came up through the transparent water. I watched also, with admiration, what I took for a blue bird flying gracefully above the surface of the sea, till a sailor told me it was a flying fish.

Then, as we moved from the coast southwards, there rose slowly up behind the island the snow-capped summit of its highest mountain, till it lost itself in the clouds, while we steamed away over a gently heaving sea and admired the entrancing blue of the water.

It was during this portion of the voyage that we found it possible to become acquainted with one another. The other passengers were mostly army officers and doctors and civil service officials; it surprised me to find so few traders on board. The officials, as a rule, are told only where they are to land, and not until on shore do they get to know their ultimate destination.

Among those whom we got to know best were a lieutenant and a Government official. The latter was going to the Middle Congo region and had to leave his wife and children for two years. The lieutenant was in much the same position, and was expecting to go up to Abescher. He had already been in Tonquin, and in Madagascar, on the Senegal, the Niger, and the Congo, and he was interested in every department of colonial affairs. He held crushing views about Mahomedanism as it prevails among the natives, seeing in it the greatest danger there is for the future of Africa. "The Mahomedan negro," he said, "is no longer any

good for anything. You may build him railways, dig him canals, spend hundreds of thousands of pounds to provide irrigation for the land he is to cultivate, but it all makes no impression on him; he is absolutely and on principle opposed to everything European, however advantageous and profitable it may be. But let a marabout—a travelling preacher of Islam—come into the village on his ambling horse with his yellow cloak over his shoulders, then things begin to wake up! Everybody crowds round him, and brings his savings in order to buy with hard cash charms against sickness, wounds, and snake bite, against bad spirits and bad neighbours. Wherever the negro population has turned Mahommedan there is no progress, either socially or economically. When we built the first railway in Madagascar, the natives stood for days together round the locomotive and wondered at it; they shouted for joy when it let off steam, and kept trying to explain to each other how the thing could move. In an African town inhabited by Mahommedan negroes, the local water power was used once for an installation of electric light, and it was expected that the people would be surprised at the novel brightness. But the evening that the lamps were first used the whole population remained inside their houses and huts and discussed the matter there, so as to show their indifference to the novelty." *

Very valuable I found my acquaintance with a military doctor who had already had twelve years' experience of Equatorial Africa, and was going to Grand Bassam as director of the Bacteriological Institute there.

* In some African colonies Mahommedan negroes are more open to progress.

At my request he spared me two hours every morning, during which he gave me an account of the general system of tropical medicine, illustrated by his own experiments and experiences. It was very necessary, he thought, that as many independent doctors as possible should devote themselves to the care of the native population ; only so could we hope to get the mastery of the sleeping sickness.

The day after we left Teneriffe the troops were ordered to wear their sun-helmets whenever they were outside the saloons and cabins. This precaution struck me as noticeable, because the weather was still cool and fresh, hardly warmer than it is with us in June, but on the same day I got a warning from an " old African," as I was enjoying the sight of the sunset with nothing on my head. " From to-day onwards," he said, " you must, even though the weather is not yet hot, regard the sun as your worst enemy, and that whether it is rising, or high in heaven, or setting, and whether the sky is cloudy or not. Why this is so, and on what the sun's power depends, I cannot tell you, but you may take it from me that people get dangerous sunstrokes before they get close to the equator, and that the apparently mild heat of the rising or setting sun is even more treacherous than the full glow of that fiery body at mid-day."

At Dakar, the great harbour of the Colony of Senegambia, my wife and I set foot for the first time on the soil of Africa to which we were to devote our lives, and we felt it as a somewhat solemn moment. Of Dakar itself I have no kindly remembrance, for I cannot forget the cruelty to animals which is universal there. The town lies on a steep slope, the streets are

mostly in very bad condition, and the lot of the poor beasts of burden which are at the mercy of the negroes is terrible : I have never seen such overworked horses and mules as here. On one occasion when I came on two negroes who were perched on a cart heavily laden with wood which had stuck in the newly mended street, and with loud shouts were belabouring their poor beast, I simply could not pass by, but compelled them to dismount and to push behind till the three of us got the cart on the move. They were much disconcerted, but obeyed without replying. " If you cannot endure to see animals ill-treated, don't go to Africa ! " said the lieutenant to me when I got back. " You will see plenty of that kind of horror here."

At this port we took on board a number of Senegalese tirailleurs with their wives and children. They lay about the foredeck, and at night crept, head and all, into big sacks, as they had to sleep in the open. The wives and children were heavily loaded with charms, enclosed in little leather bags, even the babies at the breast not being exempt.

The shores of Africa I had pictured to myself as desert, and when, on the way to Konakri, the next place of call to Dakar, we put in towards the coast, I was surprised to see nothing but magnificently green woods coming down right to the water's edge. With my telescope I could see the pointed huts of the negro villages, and rising between us and them, like a cloud, the spray of the waves on the bar ; the sea, however, was fairly calm, and the coast, so far as I could see, was flat.

" A shark ! A shark ! " I rushed from the writing saloon, and was shown a black triangular object

projecting from the water and moving in the direction of the ship. It was a fin of that dreaded sea-monster, and whoever has once seen it never forgets it or confuses it with anything else. The West African harbours all swarm with sharks. In Kotonu I saw one, enticed by the kitchen refuse, come to about twelve yards from the ship. The light being good and the water very transparent, I could see for several minutes the whole length of its glistening grey and yellow body, and observe how the creature turned over nearly on to its back to get what it considered worth devouring into its mouth, which, as we all know, is placed on the underside of its head.

In spite of the sharks the negroes in all these harbours are ready to dive for coins, and accidents seldom happen to them, because the noise they make during the proceedings gets on the nerves of even these wolves of the sea. At Tabou I was astonished to see one of the divers quite silent while the rest were crying out for more coins, but I noticed later that he was the most skilful of the lot and had to keep silent because his mouth served as his purse, and he could hardly shut it for the number of nickel and silver coins that were in it.

From Konakri onwards we were almost always within sight of the coast. The Pepper Coast, the Ivory Coast, the Gold Coast, the Slave Coast! If only that line of forest on the horizon could tell us about all the cruelty it has had to witness! Here the slave dealers used to land and ship their living cargoes for transport to America. "It is not all as it should be, even to-day," said to me an employee of a big trading firm, who was returning for a third period of work to his post

in Africa. "We bring the negroes strong drink and diseases which were previously unknown among them. Do the blessings we bring the natives really outweigh the evils that go with them?"

Several times during meals I found myself watching the guests at the different tables. All had already worked in Africa, but with what objects? What ideals had they? So pleasant and friendly here, what sort of people were they away in their places of work? What responsibility did they feel? In a few days the three hundred of us who left Bordeaux together will have landed in Africa, and in a few weeks we shall be separated, taking up our duties on the Senegal, on the Niger, on the Ogowe, on the Congo and its tributaries, some even as far away as Lake Chad, to work in these different regions for three years or so. What shall we accomplish? If everything could be written down that is done during these years by all of us who are now here on this ship, what a book it would be! Would there be no pages that we should be glad to turn over as quickly as possible? . . .

But the ship is carrying us on and on. Grand Bassam . . . Kotonou . . . Each time there are hearty farewells exchanged between many who have hardly spoken to each other. "Good health to you!" The words are spoken with a smile, but again and again, and in this climate they have a serious sound. How will those to whom they are spoken look when they come on board next? And will they all come back? . . . The windlasses and cranes begin to creak; the boats are dancing on the waves; the red roofs of the seaside town throw us a bright greeting from out of the mass of greenery; the waves breaking on the sandy bar send

up their clouds of spray . . . and behind them all lies the immeasurable stretch of land, at some place in which every one who leaves us here is to be a lord and master, all his doings having a significance of some sort for the great land's future. "Good health to you! Good health to you!" It seems to be scarcely a solemn enough farewell for all that lies in the future!

At Tabou and at Grand Bassam, on the Ivory Coast, and at Kotonou, the swell is so heavy even in good weather that passengers cannot get into the boats by the rope-ladder, but must be lowered into them four at a time in wooden boxes, such as one sees on merry-go-rounds at village fairs. It is the duty of the engineer who manages the crane to seize the right moment for letting the cradle with its four occupants safely down into the bottom of the boat which is dancing up and down on the waves; the negro in the boat has to see that his craft is exactly below the cradle as it descends, and accidents are not infrequent. The unloading of cargo is also a very difficult operation and only possible in calm weather. I now understand the assertions that West Africa is very poor in good harbours.

At Tabou we took on board, as is done on every voyage, some fifty negroes for handling the cargo. They are taken as far as the Congo, to be landed again on the return voyage, and they helped with the unloading at Libreville, Cape Lopez, and Matadi, the places to which most of the freight is consigned. They do their work perfectly, almost better than the dock labourers at Pauillac, but their behaviour towards the other coloured folk on board is brutal. Whenever the latter get the least bit in their way they come to blows.



FIG. 2.—A RIVER STEAMER ON THE OGOWE.

Every evening the glimmer of the sea, as the ship ploughs her way through it, is wonderful: the foam is phosphorescent, and little jelly-fishes spring up through it like glowing balls of metal. After leaving Konakri we saw almost every night the reflection of storms that swept across the country, and we passed through several deluges of rain accompanied by tornadoes that did nothing, however, to cool the air. On cloudy days the heat was worse than on others, and the sun, although not shining directly on us, was said to be much more dangerous in such weather than at other times.

Early on April 13th, a Sunday, we reached Libreville, and were welcomed by Mr. Ford, the American missionary, who brought us a preliminary gift from Africa of flowers and fruit from the mission-house garden. We thankfully accepted his invitation to visit the mission station, which is called Baraka, and is situated on a hill about $2\frac{1}{2}$ miles along the coast from Libreville. As we mounted the hill through the rows of neat bamboo huts belonging to the negroes, the chapel doors opened after service. We were introduced to some of the congregation and had a dozen black hands to shake. What a contrast between these clean and decently clothed people and the blacks that we had seen in the seaports, the only kind of native we had met up to now! Even the faces are not the same. These had a free and yet modest look in them that cleared from my mind the haunting vision of sullen and unwilling subjection, mixed with insolence, which had hitherto looked at me out of the eyes of so many negroes.

From Libreville to Cape Lopez it is only an eight hours' run. When, early on Monday, April 14th, we

came in sight of the harbour, an anxiety seized me which I had felt before occasionally during the last week or so. The custom house and the duties! During the latter part of the voyage all sorts of tales had been told at meal times about the colonial duties. "Ten per cent. on the value of all you bring you'll have to fork out!" said an old African. "And whether the things are new or old doesn't matter in the least!" added another. However, the customs officer was fairly gracious to us. Perhaps the anxious faces we showed, as we laid before him the list of the things in our seventy cases, toned him down to a gentler mood, and we returned to the ship with a delightful feeling of relief, to sleep in it for the last time. But it was an uncomfortable night: cargo was being unloaded and coal taken in, till the negroes at the cranes could no longer stand for weariness.

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Early on Tuesday we transferred to the *Alembe*, which, being a river boat, was built broad and shallow, and its two paddle-wheels were side by side at the stern, where they are safe from wandering tree trunks. It took up only the passengers and their personal luggage, being already full of cargo. Our cases were to follow in the next boat a fortnight later. We started at 9 a.m., so as to pass safely at high tide over the sandbanks which block the mouth of the Ogowe, and a few passengers who had stayed on shore too long were left behind. They overtook us, however, later on in a motor boat.

River and forest . . . ! Who can really describe the first impression they make? We seemed to be

dreaming ! Pictures of antediluvian scenery which elsewhere had seemed to be merely the creation of fancy, are now seen in real life. It is impossible to say where the river ends and the land begins, for a mighty network of roots, clothed with bright-flowering creepers, projects right into the water. Clumps of palms and palm trees, ordinary trees spreading out widely with green boughs and huge leaves, single trees of the pine family shooting up to a towering height in between them, wide fields of papyrus clumps as tall as a man, with big fan-like leaves, and amid all this luxuriant greenery the rotting stems of dead giants shooting up to heaven. . . . In every gap in the forest a water mirror meets the eye ; at every bend in the river a new tributary shows itself. A heron flies heavily up and then settles on a dead tree trunk ; white birds and blue birds skim over the water, and high in air a pair of ospreys circle. Then—yes, there can be no mistake about it !—from the branch of a palm there hang and swing—two monkey tails ! Now the owners of the tails are visible. We are really in Africa !

So it goes on hour by hour. Each new corner, each new bend, is like the last. Always the same forest and the same yellow water. The impression which nature makes on us is immeasurably deepened by the constant and monotonous repetition. You shut your eyes for an hour, and when you open them you see exactly what you saw before. The Ogowe is not a river but a river system, three or four branches, each as big as the Rhine, twisting themselves together, and in between are lakes big and little. How the black pilot finds his way correctly through this maze of watercourses is a riddle to me. With the spokes of the great wheel in

his hand he guides the ship, without any map before him, from the main stream into a narrow side channel, from this into the lake, and from the lake back into the main stream ; and so again and again. But he has worked up and down this stretch of water for sixteen years, and can find his way along even by moonlight !

The current in the lower part of the river is sluggish, but it is very different higher up, though it nowhere becomes as strong as that of the Rhine. Invisible sandbanks and tree trunks floating just below the surface demand very cautious navigation, and the boat's average speed is not more than eight miles an hour.

After a long run we stop at a small negro village, where, stacked on the river bank, are several hundred logs of wood, such as bakers often use, and we lie to in order to ship them, as wood is the fuel used for the engines. A plank is put out to the bank ; the negroes form line and carry the logs on board. On the deck stands another negro with a paper, and as soon as ten logs have passed, another on the plank calls to him in musical tones, " Put a one." When the hundredth log comes, the call, in the same pleasant tone, is, " Put a cross." The price is from four to five francs a hundred, which is rather high when one considers that the logs are all windfalls and only have to be collected.

The captain abuses the village elder for not having had logs enough ready. The latter excuses himself with pathetic words and gestures. At last they come to an agreement that he shall be paid in spirits instead of in cash, because he thinks that the whites get their liquor cheaper than the blacks do, so that he will make a better bargain. . . . Every litre of alcohol pays two

francs duty on coming into the colony, and I pay for the absolute alcohol which I use for medical purposes the same duty as is paid on the ordinary liquor for drinking.

Now the voyage continues. On the banks are the ruins of abandoned huts. "When I came out here fifteen years ago," said a trader who stood near me, "these places were all flourishing villages." "And why are they so no longer?" I asked. He shrugged his shoulders and said in a low voice, "L'alcohol. . . ."

A little after sunset we lay to opposite a store, and two hours were spent in shipping 3,000 logs. "If we had stopped here in daylight," said the merchant to me, "all the negro passengers" (there were about sixty of them) "would have gone ashore and bought spirits. Most of the money that the timber trade brings into the country is converted into rum. I have travelled about in the colonies a great deal, and can say that rum is the great enemy of every form of civilisation."

Thus with the ennobling impressions that nature makes are mingled pain and fear; with the darkness of the first evening on the Ogowe there lowers over one the shadow of the misery of Africa. Through the gloaming chimes the monotonous call, "Make a one," "Make a cross"; and I feel more convinced than ever that this land needs to help it men who will never let themselves be discouraged.

With the help of the moon we are able to go further. Now we see the forest like a gigantic border on the river bank; now we seem to graze its dark wall, from which there streams out a heat that is almost unendurable. The starlight lies gently on the water; in the distance there is summer lightning. Soon after midnight the

vessel is anchored in a quiet bay, and the passengers creep into their mosquito nets. Many sleep in the cabins ; others on the couches along the walls of the dining saloon, under which are stored the mail sacks.

About 5 a.m. the engines are set in motion again. We have now covered nearly 130 miles (200 kilometres), and the forest is more imposing than further downstream. In the distance appears a hill with red roofs upon it : the mission station of N'Gômô ; and the two hours spent in shipping logs gives us time to see the station and its sawmill.

Five hours later the slopes of Lambarene come in sight, and the steamer sounds its syren, though it will take another half hour to reach the village. But the inhabitants of the widely scattered stores must be warned in good time, so that they can bring their canoes to the landing stage and take possession of the goods that we have brought for them.

The Lambarene mission station is an hour further on by canoe, so that no one could be at the landing stage to greet us, but while the cargo was being unloaded I suddenly saw a long, narrow canoe, rowed by merrily singing boys, shoot round the ship, and so fast, indeed, that the white man in the stern had only just time to throw himself backwards and save his head from contact with the ship's cable. It is Mr. Christol, with the lower class of the boys' school, and behind them comes another boat with Mr. Ellenberger, rowed by the upper class. The boys had made it a race, and the younger ones had won ; perhaps, however, because they were given the lighter boat. They were, therefore, allowed to convey the doctor and his wife ; the others took the luggage aboard. What charming young

faces ! One little man walked solemnly about, carrying my heavy rifle.

The canoe journey we found at first anything but comfortable. These vessels are only tree trunks hollowed out and are therefore both flat and narrow, so that their equilibrium is very easily disturbed. Moreover, the rowers do not sit, but stand, which, again, does not contribute to their stability. With a long, narrow paddle, which is held freely in the hands, the crew strike the water, singing also so as to keep in time with each other, and a single awkward movement of one of the rowers may upset the canoe. However, in half an hour's time we had overcome our anxiety, and enjoyed the trip thoroughly. The steamer was by now again on its way upstream, and the boys raced it, with such eagerness, too, that they nearly ran into another canoe with three old negresses in it.

In half an hour's time we leave the main stream for a branch one, the singing still going on as merrily as ever, and we can see some white spots on a hill that is flooded with light from the setting sun : the houses of the mission station ! The nearer we get, the louder is the singing, and, after crossing a stream which gusts of wind make rather rough, the canoe glides into a quiet little bay.

First there are a dozen black hands to shake, but that seems now quite natural. Then, Mrs. Christol, Miss Humbert, the schoolmistress, and Mr. Kast, the manual worker, conduct us to our little house, which the children have hastily decorated with palms and flowers. Built of wood, the house stands on some forty iron piles, which raise it about 20 inches from the ground, and a verandah runs all round its four small rooms. The

view is entrancing : below us is the stream, which here and there widens into a lake ; all round is forest, but in the distance can be seen a stretch of the main stream, and the background is a range of blue hills.

We have scarcely time to unpack the things we need at once when night comes on, as it does here always just after six. Then the bell summons the children to prayers in the schoolroom, and a host of crickets begin to chirp, making a sort of accompaniment to the hymn, the sound of which floats over to us, while I sit on a box and listen, deeply moved. But there comes an ugly shadow creeping down the wall ; I look up, startled, and see a huge spider, much bigger than the finest I had ever seen in Europe. An exciting hunt, and the creature is done for.

After supper with the Christols the school children appear in front of the verandah, which has been decorated with paper lanterns, and sing in two parts to the tune of a Swiss *Volkslied* some verses composed by Mr. Ellenberger in honour of the doctor's arrival. Then we are escorted by a squad of lantern-bearers up the path to our house, but before we can think of retiring to rest we have to undertake a battle with spiders and flying cockroaches, who seem to regard as their own domain the house which has been so long uninhabited.

At six o'clock next morning the bell rings ; the hymn sung by the children in the schoolroom is soon heard, and we prepare to begin our new work in our new home.



FIGS. 3 AND 4.—THE DOCTOR'S LITTLE BUNGALOW.

Above : Distant view, with orange and citron trees in the foreground ; Below : Near view

CHAPTER III

FIRST IMPRESSIONS AND EXPERIENCES

LAMBARENE, *July*, 1913.

STRICT orders had been widely published that only the most serious cases were to be brought to the doctor for the first three weeks, so that he might have time to settle in, but, naturally, not much attention was paid to them. Sick people turned up at every hour of the day, but practical work was very difficult, as, first of all, I had to rely on any interpreter who might be picked up on the road, and, secondly, I had no drugs, instruments, or bandages except what I had brought in my trunk.

A year before my arrival a black teacher in the mission school at Samkita, N'Zeng by name, had offered his services as interpreter and doctor's assistant, and I had sent word to him to come to Lambarene immediately on my arrival, but he did not come because in his native village, sixty miles away, he had to carry through a legal dispute over a will. At last I had to send a canoe with a message that he must come at once, and he promised to do so, but week after week went by and still he did not arrive. Then Mr. Ellenberger said to me with a smile: "Doctor, your education has begun. You are finding out for the first time what every day will prove to you more conclusively, how impossible it is to rely upon the blacks."

During the night of April 26th we heard the whistle of the steamer and soon learnt that our cases had been unloaded at the Catholic mission station, which is on the river bank, the captain having refused to venture on the, to him, unknown water of our branch stream. Fortunately, however, Mr. Champel and Mr. Pelot, the industrial missionaries from N'Gômô, had come to Lambarene, with ten of their native labourers, to help us. I was extremely anxious about the conveyance of my piano with pedal attachment, built for the tropics, which the Bach Society of Paris had given me, in recognition of many years' service as their organist, so that I might keep myself in practice even in Africa. It seemed to me impossible that such a piano, in its heavy zinc-lined case, could be carried in a hollowed-out tree trunk, and yet there are no other boats here! One store, however, possessed a canoe, hewn out of a gigantic tree, which could carry up to three tons weight, and this they lent me. It would have carried five pianos!

Soon, by dint of hard work, we got our seventy cases across, and to get them up the hill from the river bank every sound set of limbs in the station came to help, the school children working as zealously as any one. It was amusing to see how a case suddenly got a crowd of black legs underneath it and two rows of woolly heads apparently growing out of its sides, and how, amid shouting and shrieking, it thus crept up the hill! In three days everything had been carried up, and the N'Gômô helpers were able to go home. We hardly knew how to thank them enough, for without their help we could not possibly have managed the job.

Unpacking was a trial, for it was difficult to dispose

of the various articles. I had been promised a corrugated-iron building as a hospital, but it was impossible to get its framework erected, as there were no labourers to be had. For several months the timber trade had been very good, and the traders paid the labourers wages with which the Mission could not compete. In order, however, that I might have ready at hand, at any rate, the most necessary drugs, Mr. Kast, the industrial missionary, fixed some shelves in my sitting-room, the wood for which he had himself cut and planed. One must be in Africa to understand what a boon some shelves on the wall are !

That I had no place in which to examine and treat the sick worried me much. Into my own room I could not take them for fear of infection. One arranges at once in Africa (so the missionaries impressed on me from the beginning) that the blacks shall be in the white people's quarters as little as possible. This is a necessary part of one's care for oneself. So I treated and bandaged the sick in the open air before the house, and when the usual evening storm came on, everything had to be hastily carried into the verandah. Treating patients in the sun was, moreover, very fatiguing.

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Under the pressure of this discomfort I decided to promote to the rank of hospital the building which my predecessor in the house, Mr. Morel, the missionary, had used as a fowlhouse. I got some shelves fixed on the walls, installed an old camp-bed, and covered the worst of the dirt with whitewash, feeling myself more than fortunate. It was, indeed, horribly close in the

little windowless room, and the bad state of the roof made it necessary to wear my sun-helmet all day, but when the storm came on I did not have to move everything under cover. I felt proud the first time I heard the rain rattling on the roof, and it seemed incredible that I could go quietly on with my bandaging.

At the same time I discovered an interpreter and assistant. Amongst my patients there turned up a very intelligent-looking native, who spoke French remarkably well, and said he was a cook by trade but had had to give up that kind of work as it disagreed with his health. I asked him to come to us temporarily, as we could not find a cook, and at the same time to help me as interpreter and surgical assistant. His name was Joseph, and he proved extremely handy. It was hardly surprising that, as he had acquired his knowledge of anatomy in the kitchen, he should, as a matter of habit, use kitchen terms in the surgery: "This man's right leg of mutton (gigot) hurts him." "This woman has a pain in her upper left cutlet, and in her loin!" At the end of May N'Zeng arrived, the man whom I had written to engage beforehand, but as he did not seem to be very reliable, I kept Joseph on. Joseph is a Galoa, N'Zeng a Pahouin.

Work was now fairly well started. My wife had charge of the instruments and made the necessary preparations for the surgical operations, at which she served as assistant, and she also looked after the bandages and the washing of the linen. Consultations begin about 8.30, the patients waiting in the shade of my house in front of the fowlhouse, which is my surgery, and every morning one of the assistants reads out—

THE DOCTOR'S STANDING ORDERS.

1. Spitting near the doctor's house is strictly forbidden.
2. Those who are waiting must not talk to each other loudly.
3. Patients and their friends must bring with them food enough for one day, as they cannot all be treated early in the day.
4. Any one who spends the night on the station without the doctor's permission will be sent away without any medicine. (It happened not infrequently that patients from a distance crowded into the schoolboys' dormitory, turned them out, and took their places.)
5. All bottles and tin boxes in which medicines are given must be returned.
6. In the middle of the month, when the steamer has gone up the river, none but urgent cases can be seen till the steamer has gone down again, as the doctor is then writing to Europe to get more of his valuable medicines. (The steamer brings the mail from Europe about the middle of the month, and on its return takes our letters down to the coast.)

These six commandments are read out every day very carefully in the dialects of both the Galoas and the Pahouins, so that no long discussion can arise afterwards. Those present accompany each sentence with a nod, which indicates that they understand, and at the finish comes a request that the doctor's words shall be made known in all the villages, both on the river and on the lakes.

At 12.30 the assistant announces: "The doctor is going to have his lunch." More nods to show that they understand, and the patients scatter to eat their own bananas in the shade. At 2 p.m. we return, but at

6 p.m. there are often some who have not yet been seen, and they have to be put off till the next day. To treat them by lamplight cannot be thought of because of the mosquitoes and the risk of fever infection.

Each patient is given, on leaving, a round piece of cardboard on a string of fibre, on which is the number under which his name, his complaint, and the medicines given him are recorded in my register, so that if he comes back I have only to turn to the page to learn all about the case, and be spared a time-wasting second diagnosis. The register records also all the bottles, boxes, bandages, etc., which were given; only with this means of control is it possible to demand the return of these things, which in about half the cases we do get back. How valuable bottles and boxes are away from the civilised world only he can rightly estimate who has had to get medicines ready in the primeval forest for patients to take home with them!

The atmosphere is so damp here that medicines, which in Europe can be wrapped in paper or distributed in cardboard boxes, can only be kept in good condition in a corked bottle or in a tin box which closes perfectly. I had not taken sufficient account of this, and I found myself in such difficulty about it that I had to fall out with patients who said they had forgotten or lost a tin box. My friends in Europe were entreated by every post to collect from their acquaintances bottles big and little, glass tubes with corks, and tin boxes of all sorts and sizes. How I look forward to the day when I shall have a sufficient supply of such things!

The round cardboard ticket with the number on it most of the patients wear round their neck, together with

the metal one which shows that they have paid their five franc poll tax for the current year. It is seldom lost or forgotten, and many of them, especially among the Pahouins, regard it as a kind of fetish.

My name among the natives in Galoa is "Oganga," *i.e.*, fetishman. They have no other name for a doctor, as those of their own tribesmen who practise the healing art are all fetishmen. My patients take it to be only logical that the man who can heal disease should also have the power of producing it, and that even at a distance. To me it is striking that I should have the reputation of being such a good creature and yet, at the same time, such a dangerous one! That the diseases have some natural cause never occurs to my patients: they attribute them to evil spirits, to malicious human magic, or to "the worm," which is their imaginary embodiment of pain of every sort. When they are asked to describe their symptoms, they talk about the worm, telling how he was first in their legs, then got into their head, and from there made his way to their heart; how he then visited their lungs, and finally settled in their stomach. All medicines have to be directed to expelling him. If I quiet a colic with tincture of opium, the patient comes next day beaming with joy and tells me the worm has been driven out of his body but is now settled in his head and is devouring his brain: will I please give him something to banish the worm from his head too?

A great deal of time is lost trying to make them understand how the medicines are to be taken. Over and over again the interpreter tells them, and they repeat it after him; it is written, also, on the bottle or box, so that they can hear the directions again from

any one in their village who can read, but in the end I am never sure that they do not empty the bottle at one go, and eat the ointment, and rub the powders into their skin. I get, on the average, from thirty to forty people a day to treat, and the chief complaints are skin diseases of various sorts, malaria, the sleeping sickness, leprosy, elephantiasis, heart complaints, suppurating injuries to the bones (osteomyelitis), and tropical dysentery. To stop the discharge from the sores the natives cover the place with powder made from the bark of a certain tree. This hardens gradually into a paste which hinders the escape of the pus and, of course, makes the case much worse.

From the list of the complaints which come oftenest to be treated the itch (scabies) must not be omitted. It causes the blacks very great distress, and I have had patients who had not slept for weeks because they had been so tortured by the itching; many had scratched their whole body till the blood came, so that there were festering sores to treat as well as scabies. The treatment is very simple. The patient first washes in the river, and is then rubbed all over, however tall he is, with an ointment compounded of flower of sulphur (*sulphur depuratum*), crude palm oil, remains of oil from sardine tins, and soft soap. In a tin which once contained sterilised milk he receives a quantity of this ointment with which to give himself at home two more rubbings. The success of this is wonderful, the itching ceasing to worry on the second day, and this ointment has in a very few weeks made me famous far and wide.

The natives have great confidence in the white man's medicine, a result which is partly, at any rate, due to the self-sacrificing spirit and the wise understanding

with which they have been treated for a generation here on the Ogowe. In this connection I may specially mention Mrs. Lantz, of Talagouga, a native of Alsace, who died in 1906, and Mr. Robert, of N'Gômô, a Swiss who is now lying seriously ill in Europe.

My work is rendered much harder by the fact that I can keep so few medicines in the fowlhouse. For almost every patient I have to cross the court to my dispensary, there to weigh out or to prepare the medicine needed, which is very fatiguing and wastes much time. When will the iron building for the hospital be seriously taken in hand? Will it be ready before the autumn rainy season begins? What shall I do if it is not ready? In the hot season I shall not be able to work in the fowlhouse.

I am worried, too, by the fact that I have hardly any medicines left, for my *clientèle* is much more numerous than I had expected. By the June mail I sent off an extensive order, but the things will not be here for three or four months, and my quinine, anti-pyrin, bromide of potassium, salol, and dermatol are almost exhausted.

Yet what do all these disagreeables count for compared with the joy of being here, working and helping? However limited one's means are, how much one can do with them! Just to see the joy of those who are plagued with sores, when these have been cleanly bandaged up and they no longer have to drag their poor, bleeding feet through the mud, makes it worth while to work here. How I should like all my helpers to be able to see on Mondays and Thursdays—the days set apart for the bandaging of sores—the freshly bandaged patients walking or being carried down the

hill, or that they could have watched the eloquent gestures with which an old woman with heart complaint described how, thanks to digitalis, she could once more breathe and sleep, because the medicine had made "the worm" crawl right away down to her feet!

As I look back over the work of two months and a half, I can only say that a doctor is needed, terribly needed, here; that for a huge distance round the natives avail themselves of his help, and that with comparatively small means he can accomplish a quite disproportionate amount of good. The need is terrible. "Here, among us, everybody is ill," said a young man to me a few days ago. "Our country devours its own children," was the remark of an old chief.

CHAPTER IV

JULY, 1913—JANUARY, 1914

LAMBARENE, *February, 1914.*

THE Lambarene mission station is built on hills, the one which lies farthest upstream having on its summit the buildings of the boys' school, and on the side which slopes down to the river the storehouse and the largest of the mission houses. On the middle hill is the doctor's little house, and on the remaining one the girls' school and the other mission house. Some twenty yards beyond the houses is the edge of the forest. We live, then, between the river and the virgin forest, on three hills, which every year have to be secured afresh against the invasion of wild Nature, who is ever trying to get her own back again. All round the houses there are coffee bushes, cocoa trees, lemon trees, orange trees, mandarin trees, mango trees, oil palms, and pawpaw trees. To the negroes its name has always been "Andende." Deeply indebted are we to the first missionaries that they took so much trouble to grow these big trees.

The station is about 650 yards long and 110 to 120 yards across. We measure it again and again in every direction in our evening and Sunday constitutitionals, which one seldom or never takes on the paths that lead to the nearest villages. On these

paths the heat is intolerable, for on either side of these narrow passages rises the forest in an impenetrable wall nearly 100 feet high, and between these walls not a breath of air stirs. There is the same absence of air and movement in Lambarene. One seems to be living in a prison. If we could only cut down a corner of the forest which shuts in the lower end of the station we should get a little of the breeze in the river valley ; but we have neither the money nor the men for such an attack on the trees. The only relief we have is that in the dry season the river sandbanks are exposed, and we can take our exercise upon them and enjoy the breeze which blows upstream.

It had been originally intended to put the hospital buildings on the ridge of high ground on which the boys' school stands, but as the site was both too far away and too small, I had arranged with the staff of the station that I should be given a place for it at the foot of the hill on which I myself lived, on the side next the river. This decision had, however, to be confirmed by the Conference of Missionaries which had been called to meet at Samkita at the end of July. So I went there with Mr. Ellenberger and Mr. Christol, to put my case, and that was my first long journey in a canoe.

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We started one misty morning two hours before day-break, the two missionaries and myself sitting one behind the other in long folding chairs in the bow. The middle of the canoe was filled with our tin boxes, our folded camp-bedsteads, the mattresses, and with the bananas which formed the rations of the natives. Behind these things were the twelve rowers in six

pairs one behind the other; these sang about the destination to which we were bound and about who was on board, weaving in plaintive remarks about having to begin work so early and the hard day's work they had in front of them! Ten to twelve hours was the time usually allowed for the thirty to thirty-five miles upstream to Samkita, but our boat was so heavily laden that it was necessary to allow somewhat longer.

As we swung out from the side channel into the river, day broke, and enabled us to see along the huge sandbank some 350 yards ahead some dark lines moving about in the water. The rowers' song stopped instantly, as if at a word of command. The dark lines were the backs of hippopotami, which were enjoying their morning bath after their regular grazing time on land. The natives are much afraid of them and always give them a wide berth, for their temper is very uncertain, and they have destroyed many a canoe.

There was once a missionary stationed in Lambarene who used to make merry over the timidity of his rowers, and challenge them to go nearer to the great animals. One day, just as he was on the point of bursting into laughter, the canoe was suddenly shot up into the air by a hippopotamus which rose from its dive immediately beneath it, and he and the crew only saved themselves with difficulty. All his baggage was lost. He afterwards had a square patch, with the hole that the creature had made, sawn out of the bottom of the canoe, that he might keep it as a souvenir. This happened some years ago, but the story is told to any white man who asks his crew to row nearer to a hippopotamus.

In the main stream the natives always keep close to the bank where the current is not so strong: there

are even stretches of river where one finds a counter-current flowing upstream. And so we creep along, as far as possible in the shade of the overhanging trees. This canoe has no rudder, but the rower nearest the stern guides it in obedience to signals from the one in front, who keeps a sharp lookout for shallows, rocks, and floating tree trunks. The most unpleasant thing on these trips is the way in which the light and heat are reflected from the water. One feels as if from the shimmering mirror one were being pierced with arrows of fire. To quench our thirst we had some magnificent pineapples, three for each of us.

Sunrise brought the tsetse fly, which is active only by day, and compared with which the worst mosquito is a comparatively harmless creature.* It is about half as large again as our ordinary house fly, which it resembles in appearance, only its wings, when closed, do not lie parallel to each other but overlap like the blades of a pair of scissors. To get blood it can pierce the thickest cloth, but it is extremely cautious and artful, and evades cleverly all blows of the hands. The moment it feels that the body on which it has settled makes the slightest movement, it flies off and hides itself on the side of the boat. Its flight is inaudible and a small fly-whisk is the only means of protecting oneself to some extent from it. Its habit of caution makes it avoid settling on any light-coloured object, on which it would be easily detected: hence white clothes are the best protection against it. This statement I found fully confirmed during this trip, for two of us wore white, and one yellow clothes. The two of

* The *Glossina palpalis*, which conveys the germs of the sleeping sickness, belongs, as is well known, to the Tsetse family.

us hardly ever had a fly upon us: our companion had to endure continual annoyance, but the blacks were the worst sufferers.

At mid-day we stopped at a native village, and while we ate the provisions we had brought with us, our crew roasted their bananas. I wished that after such hard work they could have had some more substantial food. It was very late in the evening before we reached our destination.

With the conference, which sat for a whole week, I was strongly impressed. I felt it inspiring to be working with men who for years had practised such renunciation in order to devote themselves to the service of the natives, and I enjoyed thoroughly the refreshing atmosphere of love and good-will. My proposal had a most friendly reception: it was decided that the iron shed and the other hospital buildings should be erected on the place I had in view, and the mission gave me £80 (4,000 fr.) towards the cost of building.

On our return journey we crossed the river twice in order to avoid groups of hippopotami, one of which came up only fifty yards away. Darkness had already come on when we reached our side channel, and for a whole hour we had to pick our way between sandbanks, the crew having now and again to jump out and pull or push the canoe forward. At last we got into deep water: the song of the crew deepened into a roar, and soon we saw lights moving, which advanced in zigzag lines down to a lower level and there came to a halt together. It was the ladies of Lambarene and the negro women who had come to meet the returning travellers at the landing place. The canoe cuts through the water with a whish, and with a last spurt is carried high up the beach. The

rowers give a yell of triumph, while black hands without number reach out for the boxes, the beds, the bags, and the vegetables we have brought from Samkita. "This is Mr. Christol's." "This is Mr. Ellenberger's." "This is the Doctor's." "Two of you to that; it's too heavy for one!" "Don't drop it!" "Be careful with the guns!" "Wait: not here; put it over there!" and so on. At last the whole cargo has been distributed to the right places, and we go joyfully up the hill.

Our immediate task now was to level the site for the hospital by the removal of several cubic metres of soil. After a world of trouble the Mission managed to secure four or five labourers whose laziness was perfectly magnificent, till my patience at last gave way. A timber merchant whom we knew, Mr. Rapp, had just arrived with a working party in order to examine the neighbouring forest, in which he wanted to secure a concession, and he was staying at the Catholic mission in order to clear off his correspondence. At my request he put eight of his sturdy carriers at my disposal. I promised them handsome pay and took a spade in hand myself, while the black foreman lay in the shade of a tree and occasionally threw us an encouraging word. With two days of steady work we had got the soil cleared away and the spot levelled. The labourers went off with their pay, but on the way back, I regret to say, they stopped at a store and, in spite of my warnings, turned it all into spirits. They reached home in the middle of the night, blind drunk, and the next day were fit for nothing. But we were now in a position to begin building the hospital.

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Joseph and I were now doing all the work without help. N'Zeng went off to his village on leave in August, and, as he did not return at the time agreed on, he was discharged. Joseph gets 70 francs (£2 16s.) a month, though as a cook at Cape Lopez he used to get 120 (£4 16s.). He finds it hard that work demanding some education should be worse paid than the common kinds.

The number of people with heart complaints astonishes me more and more. They, on the other hand, are astonished that I know all about their trouble as soon as I have examined them with the stethoscope. "Now I believe we've got a real doctor!" said an old woman to Joseph not long ago. "He knows that I can often hardly breathe at night, and that I often have swollen feet, yet I've never told him a word about it and he has never even looked at my feet." I cannot help saying to myself that there is something really glorious in the means which modern medicine has for treating the heart. I give digitalis according to the new French method (daily doses of a tenth of a milligram of digitalin continued for weeks and months) and am more than pleased with the results obtained. It must be said that it is easier to treat heart disease here than it is in Europe, for when patients are told that they must rest and keep quiet for weeks, they are never obliged to object that they will lose their wages and perhaps their work. They simply live at home and "recruit," and their family, in the widest sense of that word, supports them.

Mental complaints are relatively rarer here than in Europe, though I have already seen some half-dozen such. They are a great worry as I do not know how to

dispose of them. If they are allowed to remain on the station they disturb us with their cries all the night through, and I have to get up again and again to quieten them with a subcutaneous injection. I can look back on several terrible nights which resulted in my feeling tired for many a day afterwards. The difficulty can be surmounted in the dry season, for then I can make the mental patients and their friends camp out on a sandbank about 600 yards away, although getting across to see them twice a day consumes a great deal both of time and of energy.

The condition of these poor creatures out here is dreadful. The natives do not know how to protect themselves from them. Confinement is impossible, as they can at any time break out of a bamboo hut. They are therefore bound with cords of bast, but that only makes their condition worse, and the final result almost always is that they are somehow or other got rid of. One of the Samkita missionaries told me once that a couple of years before, while sitting one Sunday in his house, he had heard loud cries in a neighbouring village. He got up and started off to see what was the matter, but met a native who told him it was only that some children were having the sand flies cut out from their feet; he need not worry, but might go home again. He did so, but learnt the next day that one of the villagers, who had become insane, had been bound hand and foot and thrown into the water.

My first contact with a mentally-diseased native happened at night. I was knocked up and taken to a palm tree to which an elderly woman was bound. Around a fire in front of her sat the whole of her family, and behind them was the black forest wall. It was a

glorious African night and the shimmering glow of the starry sky lighted up the scene. I ordered them to set her free, which they did, but with timidity and hesitation. The woman was no sooner free than she sprang at me in order to seize my lamp and throw it away. The natives fled with shrieks in every direction and would not come any nearer, even when the woman, whose hand I had seized, sank quietly to the ground as I told her, and offered me her arm for an injection of morphia and scopolamin. A few moments later she followed me to a hut, where, in a short time, she went to sleep. The case was one of an attack of recurrent maniacal disturbance, and in a fortnight she was well again, at least for a time. In consequence of this the report spread that the doctor was a great magician and could cure all mental diseases.

Unfortunately, I was soon to learn that there are forms of maniacal disturbance here with which our drugs can do little or nothing. The second case was an old man, and he, too, was brought with hands and feet bound. The ropes had cut deeply into his flesh, and hands and feet alike were covered with blood and sores. I was amazed at the small effect produced by the strongest doses of morphia, scopolamin, chloral hydrate, and bromide of potassium. On the second day Joseph said to me : " Doctor, believe me, the man is out of his mind because he has been poisoned. You will make nothing of him ; he will get weaker and wilder, and at last he will die." And Joseph was right ; in a fortnight the man was dead. From one of the Catholic fathers I learnt that he had robbed some women, and, therefore, had been followed up and poisoned by their relatives.

A similar case I was able to study from the beginning.

One Sunday evening there arrived in a canoe a woman who was writhing with cramp. I thought at first that it was simple hysteria, but the next day maniacal disturbance supervened, and during the night she began to rave and shriek. On her, too, the narcotics had hardly any effect, and her strength rapidly diminished. The natives surmised that she had been poisoned, and whether they were right or not I am not in a position to decide.

From all I hear it must be true that poison is much used in these parts, and further south that is still oftener the case: the tribes between the Ogowe and the Congo are notorious in this respect. At the same time there are, among the natives, many inexplicable cases of sudden death which are quite unjustifiably regarded as the result of poison.

Anyhow, there must be many plants the juices of which have a peculiarly stimulating effect on the system. I have been assured by trustworthy persons that there are certain leaves and roots which enable men to row for a whole day without experiencing either hunger, thirst, or fatigue, and to display at the same time an increasingly boisterous merriment. I hope in time to learn something more definite about these "medicines," but it is always difficult to do so, because the knowledge about them is kept a strict secret. Any one who is suspected of betraying anything about them, and, above all, if it is to a white man, may count with certainty on being poisoned.

That the medicine men employ poison to maintain their authority I learnt in a peculiar way through Joseph. About the middle of the dry season his village went off to a sandbank about three hours

upstream from here, on a fishing expedition. These fishing days are not unlike the Old Testament harvest festivals, when the people "rejoiced before Yahweh." Old and young live together for a fortnight in "booths" made with branches of trees and eat at every meal fresh fish, boiled, baked, or stewed. Whatever is not consumed is dried and smoked, and if all goes well, a village may take home with it as many as ten thousand fish. As Joseph's eyes nearly start from their sockets whenever the conversation turns on fish, I proposed to allow him to go out with his village for the first afternoon, and asked him to take a small tub in which to bring back a few fishes for the doctor. He showed, however, no enthusiasm at the prospect, and a few questions put me in possession of the reason. On the first day there is no fishing done, but the place is blessed. The "elders" pour rum and throw tobacco leaves into the water to put the evil spirits into a good humour, so that they may let the fish be caught in the nets and may injure no one. These ceremonies were once omitted several years ago, but the following year an old woman wrapped herself up in a net and let herself be drowned. "But—why? Most of you are Christians!" I exclaimed; "you don't believe in these things!" "Certainly not," he replied, "but any one who spoke against them or even allowed himself to smile while the rum and tobacco were being offered, would assuredly be poisoned sooner or later. The medicine men never forgive, and they live among us without any one knowing who they are." So he stayed at home the first day, but I allowed him to go some days later.

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Besides the fear of poison there is also their dread of the supernatural power for evil which one man can exert over another, for the natives here believe that there are means of acquiring such powers. Whoever has the right fetish can do anything; he will always be successful when hunting, and he can bring bad luck, sickness, and death on any one whom he wishes to injure. Europeans will never be able to understand how terrible is the life of the poor creatures who pass their days in continual fear of the fetishes which can be used against them. Only those who have seen this misery at close quarters will understand that it is a simple human duty to bring to these primitive peoples a new view of the world which can free them from these torturing superstitions. In this matter the greatest sceptic, did he find himself out here, would prove a real helper of mission work.

What is fetishism? It is something born of the fears of primitive man. Primitive man wants to possess some charm to protect him from the evil spirits in nature and from those of the dead, as well as from the power for evil of his fellow men, and this protecting power he attributes to certain objects which he carries about with him. He does not worship his fetish, but regards it as a little bit of property which cannot but be of service to him through its supernatural powers.

What makes a fetish? That which is unknown is supposed to have magical power. A fetish is composed of a number of little objects which fill a small bag, a buffalo horn, or a box; the things most commonly used are red feathers, small parcels of red earth, leopard's claws and teeth, and . . . bells from Europe! Bells of an old-fashioned shape which date from the

barter transactions of the eighteenth century ! Opposite the mission station a negro has laid out a small cocoa plantation, and the fetish which is expected to protect it hangs on a tree in a corked bottle. Nowadays valuable fetishes are enclosed in tin boxes, so that they may not be damaged by termites, from whose ravages a wooden box gives no permanent protection.

There are big fetishes and little ones. A big one usually includes a piece of human skull, but it must be from the skull of some one who was killed expressly to provide the fetish. Last summer at a short distance below the station an elderly man was killed in a canoe. The murderer was discovered, and it is considered to have been proved that he committed the crime in order to secure a fetish by means of which he hoped to ensure the fulfilment of their contracts by people who owed him goods and money !

A few weeks later my wife and I took a walk one Sunday through the forest to Lake Degele, which is about two hours distant. In the village in which we took a mid-day rest the people had nothing to eat because for several days the women had been afraid to go out to the banana field. It had become known that several men were prowling about the neighbourhood who wanted to kill some one in order to obtain a fetish. The women of Lambarene asserted that these men had also been seen near one of our wells, and the whole district was in a state of excitement for several weeks.

I am myself the possessor of a fetish. The most important objects in it are two fragments of a human skull, of a longish oval shape and dyed with some sort of red colouring matter ; they seem to me to be from

the parietal bones. The owner was ill for many months, and his wife also, both suffering tortures from sleeplessness. Several times, however, the man heard in a dream a voice which revealed to him that they could only get well if they took the family fetish he had inherited to Mr. Haug, the missionary in N'Gômô, and followed Mr. Haug's orders. Mr. Haug referred him to me, and made me a present of the fetish. The man and his wife stayed with me several weeks for treatment, and were discharged with their health very much improved.

The belief that magical power dwells in human skulls which have been obtained expressly for this purpose, must be a quite primitive one. I saw not long ago in a medical periodical the assertion that the supposed cases of trephining which have often been recognised during the excavation and examination of prehistoric graves were by no means attempts at treatment of tumours on the brain or similar growths, as had been assumed, but were simply operations for the securing of fetish objects. The author of the article is probably right.*

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In the first nine months of my work here I have had close on two thousand patients to examine, and I can affirm that most European diseases are represented here; I even had a child with whooping-cough.

* In Keith's "Antiquity of Man" (Williams and Norgate, 1915), p. 21, is a picture of a prehistoric skull in which there is a hole made by trephining, as is shown by the fact that the edges are bevelled off. The condition of the bone shows further that the wound had healed prior to death.

Cancer, however, and appendicitis I have never seen. Apparently they have not yet reached the negroes of Equatorial Africa. On the other hand, chills play a great part here. At the beginning of the dry season there is as much sneezing and coughing in the church at Lambarene as there is in England at a midnight service on New Year's Eve. Many children die of unrecognised pleurisy.

In the dry season the nights are fresher and colder than at other times, and as the negroes have no bed clothes they get so cold in their huts that they cannot sleep, even though according to European standards the temperature is still fairly high. On cold nights the thermometer shows at least 68° F., but the damp of the atmosphere, which makes people sweat continually by day, makes them thereby so sensitive that they shiver and freeze by night. White people, too, suffer continually from chills and colds in the head, and there is much truth in a sentence I came across in a book on tropical medicine, though it seemed at the time rather paradoxical : " Where the sun is hot, one must be more careful than elsewhere to avoid chills." Especially fatal to the natives is the camp life on the sandbanks when they are out on their summer fishing expeditions. Most of the old folk die of pneumonia which they have caught on these occasions.

Rheumatism is commoner here than in Europe, and I not infrequently come across cases of gout, though the sufferers cannot be said to bring it on by an epicurean diet. That they eat too much flesh food cannot possibly be alleged, as except for the fish-days in summer they live almost exclusively on bananas and manioc.

That I should have to treat chronic nicotine poisoning out here I should never have believed. At first I could not tell what to think of acute constipation which was accompanied by nervous disturbances and only made worse by aperients, but while treating a black Government official who was suffering severely I came to see clearly, through observation and questioning, that the misuse of tobacco lay at the root of it. The man soon got well and the case was much talked of, as he had been a sufferer for years and had become almost incapable of work. From that time, whenever a case of severe constipation came to me, I asked at once: "How many pipes a day do you smoke?" and I recognised in a few weeks what mischief nicotine produces here. It is among the women that cases of nicotine poisoning are most frequent. Joseph explained to me that the natives suffer much from insomnia, and then smoke all through the night in order to stupefy themselves.

Tobacco comes here from America in the form of leaves, seven of which form a head (*tête de tabac*). It is a plant which is frightfully common and also frightfully strong (much stronger than that which is smoked by white people), and it largely takes the place of small coins: *e.g.*, one leaf, worth about a halfpenny, will buy two pineapples, and almost all temporary services are paid for by means of it. If you have to travel, you take for the purchase of food for the crew, not money, for that has no value in the forest, but a box of tobacco-leaves, and to prevent the men from helping themselves to its valuable contents you make it your seat. A pipe goes from mouth to mouth during the journey; and anybody who wants to travel fast and will promise

his crew an extra two leaves each, is sure to arrive an hour or two sooner than he otherwise would.

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The teeth also give the natives much trouble. Many of my patients suffer from shrinking of the gums together with purulent discharges (*pyorrhæa*) caused by accumulations of tartar. Then, in course of time, all the teeth get loose and fall out. Strange to say, these cases get well more quickly here than in Europe, where the complicated treatment often fails to attain its object. I have obtained successful results from regular painting with an alcoholic solution of thymol, only the patient has to be careful not to swallow any of the liquid, which is, of course, very poisonous.

It seems to the natives almost incredible that I can extract teeth which are not yet loose, but they do not all trust the polished forceps! A chief who was plagued with toothache would not submit to their use till he had gone home again to consult his wives. Presumably the family decision was unfavourable, as he did not present himself again. On the other hand, some request me to take all their teeth out and to get them new ones from Europe. A few old folk have, through the missionaries, actually got some double sets, "made by the white people," and they are now an object of much envy.

Abdominal tumours are very common here with the women.

My hope that I should not need to perform any major operation before the medical ward was ready for use was disappointed. On August 15th I had to operate on a case of strangulated hernia which had been brought

in the evening before. The man, whose name was Aïnda, begged me to operate, for, like all the natives, he knew well enough the dangers of his condition. There was, in fact, no time to lose, and the instruments were brought together as quickly as possible. Mr. Christol allowed me to use his boys' bedroom as an operating theatre; my wife undertook to give the anæsthetic, and a missionary acted as assistant. Everything went off better than we could have expected, but I was almost staggered by the quiet confidence with which the man placed himself in position on the operating table.

A military doctor from the interior, who is going to Europe on leave, tells me that he envies me the excellent assistance I had for my first operation on hernia! He himself, he said, had performed his with one native prisoner handing him the instruments and another administering the chloroform by guesswork, while each time they moved the fetters on their legs rattled; but his regular assistant was ill and there was no one who could take his place.

The aseptic precautions were, naturally, far from perfect, but the patient recovered.

January 10th, 1914. I had scarcely finished writing the above paragraphs this afternoon when I had to hurry off to the landing place. Mrs. Faure, the wife of the missionary at N'Gômô, arrived in a motor boat, suffering from a severe attack of malaria, and I had scarcely given her a first intramuscular injection of quinine when a canoe brought in a young man who had had his right thigh broken and badly mutilated by a hippopotamus in Lake Sonange. In other respects, too, the poor fellow was in a bad condition. He and a friend had gone out together to fish, but not far from

the landing place of their village a hippopotamus had come up unexpectedly and hurled their boat into the air. The friend escaped, but my patient was chased about in the water by the enraged beast for half an hour, though he was able at last to get to shore in spite of his broken thigh. I was afraid there would be serious blood poisoning, for they had brought him the twelve hours' canoe journey with his mutilated thigh wrapped in dirty rags.

I have myself had a meeting with a hippo, but it, fortunately, ended well. One autumn evening I was called up to visit a planter, and to get to him we had to pass a narrow canal about fifty yards long with a very strong current. On the journey out we saw two hippos in the distance. For the journey home, which would be in the dark, for night had fallen, the store people advised me to make a detour of a couple of hours so as to avoid the canal and the animals, but the rowers were so tired that I would not ask them for so much extra exertion. We had just got to the entrance of the canal when the two hippos came up from a dive thirty yards ahead of us, their roar sounding much as if children were blowing a trumpet into a watering can, only louder. The crew at once drew in close to the bank, where the current was least strong, but we advanced very slowly, foot by foot, the hippos accompanying us, swimming along the other bank. It was a wonderful, exciting experience. Some palm tree stems, which had got fixed in mid-stream, rose out of the water and swayed about like reeds; on the bank the forest rose straight up like a black wall, and an enchanting moonlight illuminated the whole scene. The rowers gasped with fear and encouraged each other with low calls

while the hippos pushed their ugly heads out of the water and glared angrily across at us. In a quarter of an hour we had got out of the canal and were descending the narrow arm of the river, followed by a parting roar from the hippos. I vowed that never in future would I be so scrupulous about adding even two hours to a journey in order to get out of the way of these interesting animals, yet I should be sorry not to be able to look back on those wonderful minutes, uncomfortable though the experience seemed at the time.

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Towards evening on November 1st I was again called upon to go to N'Gômô. Mrs. Faure had, without thinking, walked a few yards in the open without anything on her head, and was now prostrate with severe fever and other threatening symptoms. Truly my fellow-traveller on the *Europe* was right when he said that the sun was our great enemy. Here are some further examples:—

A white man, working in a store, was resting after dinner with a ray of sunshine falling on his head through a hole in the roof about the size of a half-crown: the result was high fever with delirium.

Another lost his pith helmet when his boat was upset. As soon as he got on to the boat, which was floating away keel uppermost, he threw himself on his back and, anticipating danger, at once took off his coat and his shirt to protect his head with them. It was too late, however, and he got a bad sunstroke.

The skipper of a small merchant vessel had to make some small repairs to the keel of his craft, which had been drawn up dry on land. While working at them he

bent his head so far that the sun shone upon his neck below his helmet. He, too, was for a time at death's door.

Children, however, are less affected than adults. Mrs. Christol's little daughter not long ago ran unobserved out of the house and walked about in the sun for nearly ten minutes without taking any harm. I am now so used to this state of things that I shudder every time I see people represented in illustrated papers as walking about bareheaded in the open air, and I have to reassure myself that even white people can do this with impunity in Europe.

The skipper of the little steamer, who had himself been down with sunstroke, had been kind enough to offer to fetch me to N'Gômô, and my wife went with me to help to nurse the patient. Following the advice of an experienced colonial doctor, I treated the sunstroke as if it were complicated with malaria, and gave intramuscular injections of a strong solution of quinine. It has been proved that sunstroke is especially dangerous to people who are already infected with malaria, and many doctors even assert that quite half the symptoms are to be put down to the malarial attack which is brought on by the sunstroke. A further necessity in such cases, when the patient can take nothing or brings everything up again, is to introduce sufficient fluid into the system to avert such injury to the kidneys as might endanger life. This is effected best with a pint of distilled and sterilised water containing 65 grains ($4\frac{1}{2}$ grams) of the purest kitchen salt, which is introduced under the skin or into a vein in the arm with a cannula.

On our return from N'Gômô we were agreeably surprised to hear that the corrugated iron hospital ward

was ready. A fortnight later the internal fitting up was practically finished, and Joseph and I left the fowl-house and settled in, my wife helping us vigorously. I owe hearty thanks for this building to Mr. Kast and Mr. Ottmann, the two practical workers of the Mission ; the former a Swiss, the latter a native of the Argentine. It was a great advantage that we could discuss all details together, and that these two were willing to listen to the considerations, suggested by my medical knowledge. Hence the building, although it is so plain and so small, is extraordinarily convenient : every nook and corner is made use of.

The building has two rooms, each 13 feet square, the outer of which serves as consulting room, the inner as operating theatre. There are also two small side rooms under the very wide projections of the roof : one is the dispensary, the other the sterilising room. The floor is of cement. The windows are very large and go right up to the roof. That prevents any accumulation of hot air at the top of the room, and every one is astonished to find how cool it is, although corrugated iron buildings are always condemned in the tropics as being intolerably hot. There is no glass in the windows, only fine wire netting to keep out mosquitoes, but there are wooden shutters outside, which are necessary on account of the storms. Along the walls run wide shelves, many of them of the rarest woods. We had no common boards left, and it would have cost much more to have had new ones sawn than to use even the most expensive that we had ready, besides throwing the work weeks backward. Under the roof white calico is stretched tightly as a protection against mosquitoes, which otherwise would find their way in through holes.

During December the waiting-room was got ready and a shed for housing the patients. Both buildings are constructed like large native huts out of unhewn logs and raffia leaves, and I myself, under Mr. Christol's direction, took part in the work. The patients' dormitory measures 42 feet by 19 feet 6 inches. Joseph has a large hut to himself. These buildings lie along both sides of a path about 30 yards long which leads from the iron building to a bay in the river, in which the canoes of the patients are moored. The bay is overshadowed by a magnificent mango tree.

When the roof of the dormitory was ready, I marked on the floor of beaten earth with a pointed stick sixteen large rectangles, each indicating a bed, with passages left between them. Then the patients and their attendants, who hitherto had been lodged, so far as possible, in a boathouse, were called in. Each patient was put into a rectangle, which was to be his sleeping place, and their attendants were given axes with which to build the bedsteads ; a piece of bast on a peg showed the height they were to have. A quarter of an hour later canoes were going up and down stream to fetch the wood needed, and the beds were ready before nightfall. They consist of four short posts ending in forks, on which tie two strong side-poles, with shorter pieces lying across, the whole bound firmly together with creeper stalks. Dried grass serves as a mattress.

The beds are about 20 inches from the ground, so that boxes, cooking utensils, and bananas can be stored below, and they are broad enough for two or three persons to occupy them at once ; if they do not provide room enough, the attendants sleep on the floor. They bring their own mosquito nets with them.

There is no separation of the sexes in the big shed ; they arrange themselves in their usual way. The only thing I insist on is that the healthy shall not take possession of a bed while a patient has to sleep on the ground. I must soon build some more huts for their accommodation, as the one dormitory is not enough. I must also have some rooms in which to isolate infectious cases, especially the dysentery ones. The patients with sleeping sickness, again, I cannot keep for any length of time in hospital, as they endanger the health of the whole station, and later on I shall build a hut for them in a quiet spot on the other side of the river. There is plenty of work to do beside the mere medical treatment.

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With the hospital building finished, the doctor's wife can develop her activity to the full. In the fowl-house there was only room for Joseph and myself. She shares with me the work of teaching Joseph how to clean and handle the instruments and to prepare for operations. She also superintends the washing, and it takes a great deal of trouble to ensure that the dirty and infected bandages are properly cleaned and sufficiently boiled. She appears punctually at ten o'clock, and stays till twelve, insisting on everything being kept in good order.

To understand what it means when my wife leaves her household work to give most of the morning to the medical work as well as not a few afternoons to the operations, for which she administers the anæsthetics, one must know how complicated the simplest style of housekeeping is in Africa. This is the result of two

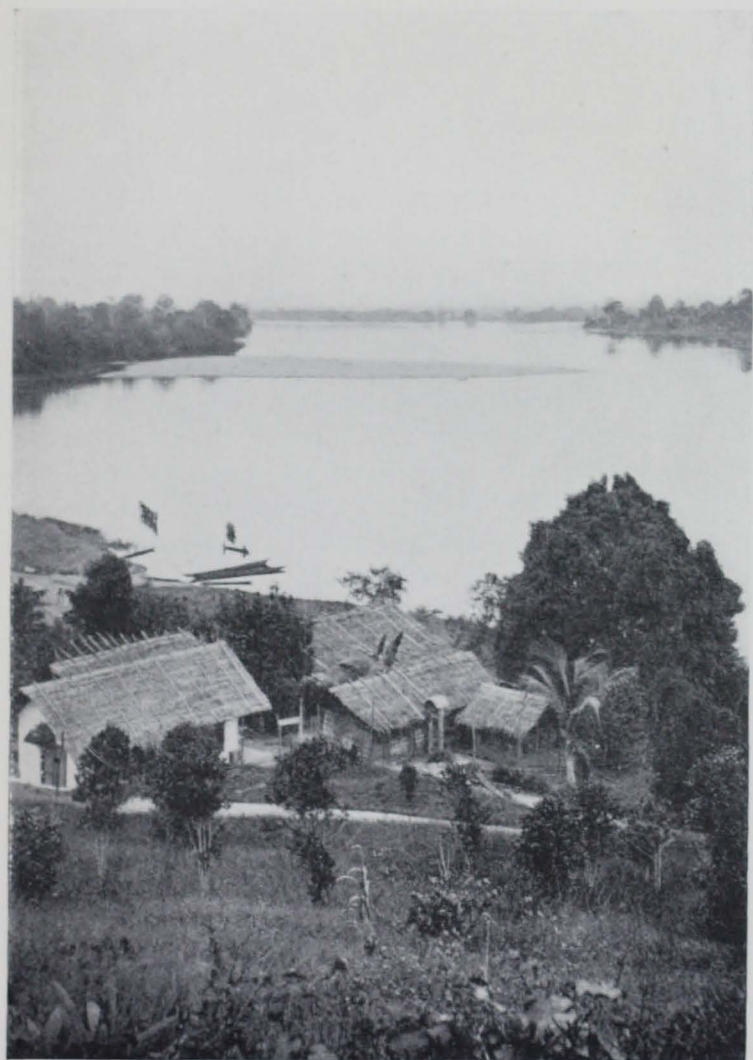


FIG. 5.--THE HOSPITAL AT LAMBARENE.

Showing corrugated iron buildings and huts, with coffee houses in the foreground

causes : first, the strict division of duties among the native servants, and, second, their unreliability. We have to keep, as is customary, three servants : a boy, a cook, and a washerman. To assign the work of the last-named to either the boy or the cook, as is often done in small households, is impossible in our case, on account of the extra washing which comes to the house from the hospital. Apart from this, a moderately good European maid could do the whole of the work quite well by herself. The cook does nothing but the cooking, the washerman the washing and ironing, and the boy looks after the rooms and the fowls. Each of them, as soon as he has finished his own work, goes off to rest ! So we have to do ourselves whatever work there is which does not belong to either of their strictly defined departments. Women servants are not to be had out here. Mrs. Christol has as nursemaid for her eighteen months old baby girl a native boy of fourteen, M'Buru by name.

Then, again, all one's servants, even the best of them, are so unreliable that they must not be exposed to the slightest temptation. This means that they must never be left alone in the house. All the time they are at work there my wife must be there too, and anything that might be attractive to their dishonesty must be kept locked up. Each morning the cook is given exactly what is to be prepared for our meals, so much rice, fat, and potato ; in the kitchen he keeps just a small supply of salt, flour, and spice, and if he forgets anything, my wife will have to go up the hill again to the house from the hospital in order to give it out to him.

That one can never leave them alone in a room,

that one keeps everything locked up and does not trust them with more than the exact amount of foodstuffs, is not taken by the black servants as an insult. They themselves expect us to observe these precautionary measures strictly, in order that they may not be held responsible for any occasional theft. Joseph insists on my locking the dispensary if I go into the dormitory from the iron building for even two minutes, and leave him alone in the consulting-room, from which one goes into the dispensary. If a European does not observe these precautions then his blacks steal his things with a good conscience. What is not locked up "goes for a walk," to use Joseph's language ; you may steal anything from a person who is so careless !

Worse still, however, than this, the negro steals not merely what will be of value to him, but anything that attracts him for the moment. Mr. Rambaud, of Samkita, lost in this way part of a valuable work in several volumes, and there disappeared one day from my bookshelf the piano edition of Wagner's "Meister-singer" and the copy of Bach's Passion Music (S. Matthew), into which I had written the organ accompaniment, which I had worked out very carefully ! This feeling of never being safe from the stupidest piece of theft brings one sometimes almost to despair, and to have to keep everything locked up and turn oneself into a walking bunch of keys adds a terrible burden to life.

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If I went simply by what the blacks ask for, I should now have to operate on some one every day ; the people with hernia quarrel as to who shall submit to the knife

first ! However, at present we manage to get off with two or three operations a week. For more than this my wife would be unable to manage the necessary preparations and the cleaning and putting away of the instruments afterwards ; nor should I be equal to the work. I have often to operate in the afternoon when I have been busy till one o'clock or even later with bandaging and examination ; and in this land one cannot take so much upon one as in a more temperate climate.

That Joseph can allow himself to collect the vessels with blood in them after an operation and to wash the instruments, is a sign of very high enlightenment. An ordinary negro will touch nothing that is defiled with blood or pus, because it would make him unclean in the religious sense. In many districts of Equatorial Africa it is difficult, or even impossible, to persuade the natives to let themselves be operated on, and why those on the Ogowe even crowd to us for the purpose, I do not know. Their readiness is probably connected with the fact that some years ago an army doctor, Jorryguibert by name, stayed some time with the District Commandant at Lambarene, and performed a series of successful operations. He sowed, and I am reaping.

Not long ago I got a rare case of injury to operate on, for which many a famous surgeon might envy me. It was a case of strangulated hernia which protruded under the ribs, the so-called lumbar hernia. There was every imaginable complication present, and when darkness fell I had not finished ; for the final sutures Joseph had to hold the lamp for me. But the patient recovered.

Much notice was attracted by an operation on a boy

who for a year and a half had had a piece of necrosed bone, as long as his hand, projecting from his leg below the knee. It was a case of osteomyelitis, and the pus secreted stank so horribly that no one could stay near him for long. The boy himself was reduced to a skeleton, but now he is fat and healthy and is beginning to walk again.

Hitherto all my operations have been successful, and that raises the confidence of the natives to a pitch that almost terrifies me. What impresses them most of all is the anæsthetics, and they talk a great deal about them. The girls in our school exchange letters with those in a Sunday school at home, and in one of them there was the following piece of news: "Since the Doctor came here we have seen the most wonderful things happen. First of all he kills the sick people; then he cures them, and after that he wakes them up again." For anæsthesia seems to the native the same thing as being dead, and similarly if one of them wants to make me understand that he has had an apoplectic fit, he says: "I was dead."

There are sometimes patients who try to show their gratitude. The man who in August was freed from a strangulated hernia collected 20 francs among his relations, "in order to pay the Doctor for the expensive thread with which he sewed up my belly."

An uncle of the boy with the sores on his feet, a joiner by trade, put in fourteen days' work for me making cupboards out of old boxes.

A black trader offered me his labourers in order that the roof of my house might be put in order in good time before the rains.

Another came to see me and thank me for having

come out to help the natives, and when he left me he presented me with 20 francs for the medicine chest.

Another patient presented my wife with a kiboko (or sjambok) of hippopotamus hide. It is made in this way: When a hippopotamus is killed, its hide, which is from $\frac{1}{2}$ inch to 1 inch thick, is cut into strips about $1\frac{1}{2}$ inches wide and nearly 5 feet long. One end is nailed to a board, the strip is twisted into a spiral, and the other end is nailed down. When it is dry that supple, sharp-cornered, and justly dreaded instrument of torture is ready.

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These last few weeks I have been busy stowing away the supply of drugs, etc., which arrived in October and November. The reserve stock we place in the small iron room on the hill, of which I have had the use since Mr. Ellenberger went away, and which the grateful uncle mentioned above has fitted with the necessary cupboards and shelves. It is true that they do not look handsome, being put together from cases and bearing still the addresses that were painted on them, but we have a place for everything: that is the essential thing. In Africa we learn not to be too exacting.

While I was worrying over the cost of these valuable supplies of medicines, bandages, and lint, the December mail brought me news of fresh gifts which made my heart lighter again. How can we thank sufficiently all our friends and acquaintances? By the time anything comes to Lambarene it costs about three times its European price, and this increase is accounted for by the cost of packing, which must be very carefully done, of the railway journey, of shipping and unloading, of

the voyage, of the colonial import duty, of conveyance up the river, and allowance for the general losses which result from heat or water in the hold or from rough handling at the ports.

Our health continues excellent ; not a trace of fever, though we need a few days' rest.

Just as I close this chapter there arrives at the station an old man with leprosy. He and his wife have come from the Fernando Vaz lagoon, which lies south of Cape Lopez and is connected with Ogowe by one of its smaller mouths. The poor creatures have rowed themselves 250 miles upstream to visit the doctor, and can hardly stand for exhaustion.