THE MOZAMBIQUE COMPANY'S TERRITORY.

INTRODUCTION.

ATTENTION has on several occasions been directed to the enlightened policy of the French Government in organising or assisting scientific missions for the purpose of making a systematic investigation of the resources of different portions of the African Continent. Notwithstanding the large area of France's own empire in Africa, the French Government has, in the most liberal spirit, not confined its assistance to missions operating in French colonies or possessions, recognising, no doubt, that the information obtained as to the natural resources and capacity for economic development of other portions of the continent, would prove of value and importance to her own colonists and officials.

For the past three years M. Guillaume Vasse has, with the authority and under the patronage of the French Government, been engaged in making an examination of the territories of the Mozambique Company in Portuguese East Africa. The territories which the Mozambique Company administers under its charter from the Portuguese Government coincide with the ancient provinces of Manica and Sofala, and cover an area of, roughly, sixty thousand square miles. They are bounded on the north by the Zambezi, on the west by the territories of the British South Africa Company, on the south by other Portuguese territory directly administered by the Portuguese Government, and on the east by the Indian Ocean.

M. Vasse, in recognition of the facilities which have been afforded him by the Mozambique Company, has from time to time communicated the results of his investigations to the

Governor of the territory, and, by the courtesy of the Conseil d'Administration at Lisbon, we are enabled to publish the following abridged version of M. Vasse's most recent report dealing with a portion of the Company's territories :—

REPORT OF M. GUILLAUME VASSE (FRENCH GOVERNMENT COMMISSIONER) TO THE GOVERNOR OF MANICA AND SOFALA.

(Translated in an abridged form.)

PART I.—RESOURCES.

The subjects dealt with in the following pages are :—Mineralogy, native vegetable products, imported plants, cattle-breeding, bee-culture, human hygiene, and veterinary medicine. I shall add to these some provisional notes on certain of the Company's regulations. These I hope to follow up by a more complete study at the end of my three years' stay in the country.

Mineralogy.—None of the formations observed in the districts of Gorongoza, Neves Ferreira, and Chimoio give promise of any important deposits.¹ The only rocks observed were granite (usually grey, more rarely pink), some outcrops of diorite, and large masses of conglomerates, in which crushed pink quartz is found associated with felspar and mica. Sometimes I have found indications of two kinds of quartz—one very hard, veined with pink, and of little or no value from a mineralogical point of view; the other still harder, of a milky white, and closely resembling hyaline quartz in its colour and consistency. Associated with this last I saw, in the house of Commandant Bivar, some specimens of copper, coming from Gorongoza, which, at first sight, seemed very promising. But their association with this—the worst of all quartzes—was a very disquieting circumstance, and no prospecting with a view to following up the clue thus presented has led to any satisfactory result. The only schists I saw in this country are the famous bituminous ones of the Mudah Valley, which, for a time, gave rise to a belief in the existence of carboniferous beds in that

¹ M. Vasse is not here dealing with the whole of the Manica district.

region. Though bituminous schists often indicate the presence of coal—as, for instance, in the basin of St. Etienne—it does not follow that they always overlie carboniferous strata. The only unmistakable evidence is the presence of the characteristic fossils of the coal-measures. I am certain, however, that deposits of coal exist somewhere in the province, and I hold the proof of this assertion in the shape of a lump of anthracite, of excellent quality, which I dredged up while collecting fish at the Inhamissane Rapids, three kilomètres above Gwengera, on the Pungwe River. I can form no opinion as to its origin—whether it was carried down from the Barue rocks by the Vunduzi, or from some more distant spot when the Pungwe was in flood. It is possible, however, that, by taking as a starting-point the alignments of the known coal-beds in the Tete basin, and prospecting along them, we might find carboniferous strata following the dip of those on the Zambezi.

I may add that I found, about 200 mètres before reaching the ford of the Chimulilo River, in going from S'machoco to Bue Maria, a hot sulphur spring, with a temperature of 46° Centigrade. Without venturing to draw a similar conclusion in this instance, it may be remembered that hot sulphur springs frequently indicate the presence of carboniferous deposits; and, moreover, the above is not the only one in the Company's territory, there being another in the Chimanmani district, near the Inhangombe River, which joins the Luzitu on its left bank. On the other side of the Zambezi, too, we have the important hot spring of Morumbala.

I found indications of limestone beds in Gorongoza, but nowhere could I discover any traces of iron ore. Native tradition states that the Gorongoza people, and those of the plains, used to send caravans to Manica, to buy iron weapons and implements for salt, which they manufactured themselves. This salt was obtained after the rainy season from the dried-up *tendos* (salt-pans). Of these, the one which seemed to me richest in chloride of sodium is the Nyakapanda *tendo*, behind Chikari's village.

VEGETABLE PRODUCTS.

These, in contrast with the poverty of the minerals, are abundant and interesting. Before proceeding to consider them in detail, I will enumerate a few methods of coagulating the latex of rubber-producing and other plants for purposes of analysis.

Petroleum accelerates the coagulation of certain latices, in which, if left to themselves, this process is very slow.

A large number may be advantageously treated by boiling, or by dry heat with fumigation.

Sulphuric acid, though its handling necessitates a certain amount of precaution, is a very powerful coagulating agent. Good results have been obtained from lemon-juice and sorrel-juice, also from saturated solutions of alum and of common salt.

Alcohol will coagulate almost all latices; but this method on account of the expense involved, can only be used experimentally in the laboratory, not utilised as an industrial process. Besides this, many latices contain a considerable proportion of resin soluble in alcohol, which, therefore, disappears in presence of this coagulant, and diminishes the value of the product.

If no result is obtained from any of these coagulants, it need not even then be concluded that a latex is worthless, since some, though resisting every chemical agency, are affected by mechanical processes—crushing, rotary motion, &c. Each botanical family is peculiarly susceptible to the action of certain special coagulants.

There are several species of *Landolphia* besides *L. Kirkii* which are certainly capable of producing rubber. Among those which I saw in the forest between Inhaconde and Tambarara was one in flower, which I identified as *L. Thollonii*.

Imported Rubbers.—What I have seen of the Ceara plantations at Macuire, Bue Maria, Tambarara, and Inhaconde confirms the opinion previously formed, that the Ceara is not, and never will be, a remunerative tree for Europeans to grow in this country. Native plantations may succeed, as time is of no value to their owners; yet the Ceara has so

many drawbacks that I should hesitate to advise its cultivation even by natives. If planted in a clay soil, the least gust of wind breaks its branches like glass, unless well sheltered. If the soil is sandy, it is easily uprooted by the wind. It is also very liable to the attacks of white ants—so much so, that on Cardozo's farm in Manica I saw two Ceara trees surviving out of 1,500 which had been planted two years before, the rest having been entirely destroyed by these insects.

The quantity of rubber produced by this tree under the most favourable circumstances is so much less than that obtained from it in its native country that I do not think a European could ever grow it with profit, after meeting all expenses of labour, extraction, transport, &c.

Manica and Gorongoza appear to me to be very well situated for experiments with the various species of *Ficus* to be found in this territory.

Coffee.—The coffee-trees which I saw at two places in Gorongoza (viz., below Gouveia and near S'matawe Mkulu) seemed to me to be seedlings of *Coffea Arabica*, degenerated for want of care, and resembling the coffee common in Abyssinia. I do not think that my supposition can be erroneous, as it is very probable that the Abyssinians, who certainly at one time resided in this region, should have imported various products of their own country, and, among others, coffee, which is reckoned by them among the necessities of life. In any case, the presence of these trees is an unmistakable indication that the allied varieties would thrive exceedingly well; and I regret to see that, apart from the experimental plantations at Macuire (where the altitude and soil are quite unsuitable, and the trees have, in addition, been left entirely to themselves), the Gorongoza Company has made no serious effort in this direction. The samples of coffee given to me as coming from Inhambane seemed to me identical with those observed in Gorongoza. It is indisputable that the coffee-trees of these two places must have the same origin. Unfortunately, the coffee is also identical in quality, and most detestable, having a strong flavour of turpentine. It is, therefore, absolutely necessary to substitute a more marketable variety for this inferior one.

Cotton.—For some years past the Mozambique Company has been making serious efforts to encourage cotton-growing. The experiments I have seen are not uniformly successful, but this is through no fault in the soil, which is admirably suited to the purpose, but through a want of judgment and experience on the part of individual cultivators. This does not apply to the plantations owned by companies, where the work seemed to me, in general, rational and well managed. Growers should remember that there are different kinds of cotton, each of which requires its own soil. Thus, American cotton will yield the largest crops in a heavy soil, like that of Manica, and Egyptian cotton (whether white or yellow) in a light sandy soil. It must also be borne in mind that the time of the first rains is the proper season for planting, and that it is not a matter of indifference when the seed is put into the ground; also that it must be sown on ridges, and not scattered broadcast. For want of this precaution, the water collects under the roots and rots them; the leaves turn first yellow and then red, till at last they shrivel and fall off, and the tree dies. Finally, no good crops can be secured without irrigation.

It follows from all this that cotton cannot be grown at a profit except by a company possessed of sufficient capital to allow the use of machinery, or by the Kaffirs, who grudge neither time nor trouble, so long as they can be certain of a definite annual gain, be it ever so small.

Since I have touched on the subject of native agriculture, I may say that the Mozambique Company is to be congratulated on having taken the only possible means of developing the agricultural resources of the country by encouraging the natives to work. It only remains to follow out the line of action already traced in this respect, and that European colonists should be convinced that they have an educational duty to fulfil towards the natives. This duty will be found a profitable one in the end, since, thanks to the facility with which a trading licence can be obtained, they can be the first on the spot to buy up the crops and benefit by the result. But the very fact that cotton is destined to be the agency for initiating the native into civilisation, renders it necessary for

the Company to be more chary of granting farming concessions. How can the white man encourage the native to cultivate any crop if the latter sees that his instructor cannot grow it successfully? It seems, therefore, that every application for a farm ought to be justified by the possession of a certain amount of capital and a certain degree of practical agricultural experience, or, at any rate, the applicant should be in a position to employ an experienced manager. I am also inclined to think that, in the interest of the colonists themselves, no land should be granted unless situated either on the bank of a river or in such a position as to make irrigation easy.

Cocoa-nut Palms.—I saw very few plantations, compared with what there ought to be, in the districts of Gorongoza, Neves Ferreira, and Chimoio. Those due to private initiative, to be found in some places, were in a deplorable condition, owing to the ignorance of the planters. It is well known that this palm requires sand, and the trees had been planted in mud; but plenty of moisture is an equally indispensable condition, and this had been entirely overlooked. The consequence was a complete failure. No colonist can expect to make his fortune out of cocoa-nuts alone, as the palm requires at least eight years' constant care before it bears profitably, and only large companies could undertake to grow it on any considerable scale.

Oil-palms.—I regret to find that the interesting experiments made by the Gorongoza Company in growing these palms should have been given up. It is to be hoped that another attempt will be made and persevered in.

I may conclude this section of my report by expressing the hope that some experiments may be made in grafting the cocoa-nut on the *Hyphaene* palm (called by the natives *dikona*), which is so hardy in resisting fire and the attacks of the borer beetle, that, provided the fruit of the hybrid were of any value, the adoption of this plan might be recommended for ensuring that vigour in the young trees which is lacking in the cocoa-nut.

I am glad to learn that experiments have been made in the Mozambique Company's gardens in growing *Sansevieria* and

two varieties of ramie, as well as with the *tsikiri*, a tree belonging to the genus *Eriodendron*, found in Neves Ferreira and Gorongoza, whose fruit, somewhat resembling the olive, yields an excellent oil.

Pineapples.—I may mention that the fibre of this plant, treated by machinery, might be made very profitable in this country, where the fruit is grown in great abundance.

Tobacco does not appear to have been tried to any extent worth mentioning.

The cultivation of food-plants, with the exception of rice, should be left exclusively to the natives, from whom Europeans can buy them more cheaply than they can grow them for themselves.

Fertility of the Soil.—The fertility of the Gorongoza district is guaranteed by the variety and the flourishing condition of the native crops grown there. Native cotton thrives excellently, and the limited area of land now under rice could very easily be extended. Facilities for irrigation are numerous, and the falls of the Inhandiche could be utilised for installing a saw-mill, the neighbouring forests abounding in fine timber, and the river having a sufficient volume of water to float the logs down to the Pungwe. No progress can be made, however, in developing the resources of the country without destroying the lions, which swarm to such a degree as to terrorise the inhabitants and impede communication during the season when the grass is high, putting a stop to the collection of wax, and even to work in the gardens. Since I wrote the above lines, four natives have been killed and eaten by lions in two months, within a comparatively limited area—one at a village of Magovuro, one near Chitengo, and two in the neighbourhood of Massara.

Without being actually very poor, the district of Neves Ferreira is far less favoured by Nature than that of Gorongoza. The soil is fertile enough, but the water-supply is badly distributed for irrigation purposes. The same may be said of Chimoio.

Cattle-rearing, &c.—There is, unfortunately, very little of this. Cattle are found scarcely anywhere, except at Tambarara, where Commandant Bivar owns a few head, which

seem in admirable condition. On the other hand, goats are numerous, and pigs rapidly increasing. Unfortunately, the natives do not understand breeding, take no care in the selection of their sires, and allow all animals to run together at pasture, so that all their domestic breeds have greatly degenerated. Fowls are largely raised, and their numbers would be still greater if a remedy could be found for the prevailing epidemic. Experiments with this object in view are now being carried on at the Pasteur Institute.

Apiculture.—This already exists, to some extent, and should be encouraged. It would be interesting, in my opinion, to procure and set free in favourable situations some swarms of European bees, which produce far more honey than the African species; and this might also render possible an increased production of wax. I have been led to inquire into the reasons for the diminished export of wax in the last few years. It is no doubt partly due to a succession of dry seasons, which have killed some plants and restricted the flowering of others, but also to the way in which the natives take the honey. They cut a hole in the trunk of the hollow tree containing the hive, and insert a lighted grass torch, so that most of the bees are killed, not to mention the destruction of the young brood in the combs. One hive does not yield over five hundred grammes of wax, so that when we consider the number of tons annually exported, it is not surprising that the bees are rapidly diminishing in number. In Madagascar and other places the method followed—which is much to be preferred—is to hold the torch *outside* the nest, when the bees retire out of reach of the smoke, ready to return and rebuild their combs as soon as the hostile forces have withdrawn. Not content with the havoc thus made, the Mozambique natives always cut down the tree if the hive is beyond their reach—a ruinous procedure which needs no further comment. The honey from the Gorongoza mountains seems to me in all points superior to that obtained in the plains, being white, aromatic, and firm in consistency, while the lowland honey is yellow, liquid, and often insipid. This difference arises solely from the quality of the flowers accessible to the bees in different localities.

Sericulture.—I have been particularly interested in a splendid Bombyx which I caught in the Gorongoza mountains in the valley of the Inhandiche. I was unable to determine the species with certainty, as the specimen had been spoilt by rain. But if not identical with *Saturnia Cynthia*, found in Natal, it is very closely allied to that moth, and, therefore, capable of being utilised for the production of silk. I also discovered a spider, closely related to the Madagascar Mygale, which, like it, produces a silk seemingly of very good quality, and now under examination by specialists.

GUILLAUME VASSE.

(*To be continued.*)