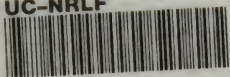


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SAN FRANCISCO

# FRENCH COLONIES

and

## PROTECTORATES

GENERAL INFORMATION



MAY 1915

EMILE LAROSE,

EDITEUR-GRAVEUR

11, Rue Victor-Consul, 11  
PARIS










FRENCH COLONIES

and

PROTECTORATES



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List of surface, population, trade and principal produces.

COLONIES	SURFACE AREAS SQUARE KILOMÈTRES	POPULATION	TRADE per millions of frs		PRINCIPAL'S PRODUCES
			Import.	Export.	
ALGERIA. . . . .	575.388	5.492.569	729.411.000	562.917.000	Corn-Crops, Wines, Oils, Cattle, Hides, Wool, Dates, Phosphates, Ores, Agrumes, Early fruits.
TUNISIA . . . . .	430.000	4.850.000	144.254.678	178.663.360	Corn Crops, Oils, Fish, Wines, Cattle, Hides, Wool, Dates, Phosphates, ores.
MOROCCO. . . . .	600.000	4.550.000	149.774.979	30.865.639	Corn Crops, Wool, Hides, Wax, Eggs.
<b>AFRICA</b>					
FRENCH WEST AFRICA (Senegal, Haut-Senegal et Niger, Territoire militaire Guinée, Côte d'Ivoire, Dahomey, Mauritanie . . . . .)	3.913.250	9.814.849	151.574.300	126.443.852	Neat Cattle, Hides, Earth Nuts, Palme Kernels, Gums, India rubber.
FRENCH EQUATORIAL AFRICA (Gaboon Tchad) (4) . . . . .	4.734.228	5.028.500	21.181.763	36.487.988	India rubber, Woods, Ivory, Palmists, Fibres, Ore.
MADAGASCAR . . . . .	585.000	2.701.081	46.747.456	56.054.377	Hides, Waxes, Conserves of meat, Vegetables, Vanilla, India rubber, Fibres, Ore.
SOMALIS'COAT . . . . .	420.000	208.061	33.946.843	47.704.448	Hides, Coffee, Wax.
REUNION. . . . .	2.500	177.677	24.934.943	16.592.290	Sugar, Vanille, Essential's oils.
<b>ASIA</b>					
French India Estates . . . . .	513	277.723	10.837.415	43.720.095	Earlhnuts, cotton laces.
INDO CHINA (Cochinchine, Cambodge, Annam, Laos, Tonkin, Kouang-Tchéou) . . . . .	803.054	16.315.063	306.238.068	345.259.253	Fisheries, Meuls, Hides, Basket, Trade, Threads.
<b>PACIFIC</b>					
NEW-CALEDONIA ET DEP. (Archipels of Loyalty, Wallis, Foutou-na and Alofi) . . . . .	18.654	55.886	17.707.916	45.838.405	Coprah, Coffee, Ore.
French's Oceania Estates (Isles Tabiti, Marquises, Tuamoutou, Gambier, Toubouai) . . . . .	3.064	30.563	9.030.474	11.554.507	Mother of pearl, Coprah, Vanilla.
<b>AMERICA</b>					
St-Pierre et Miquelon . . . . .	241	6.483	4.356.745	6.201.998	Fisheries.
GAUDELOUPE ET DÉPENDANCES . . . . .	1.780	190.275	20.174.930	48.287.489	Sugars, Coffee, Cocoa.
MARTINICA . . . . .	987	482.024	22.144.315	28.890.814	Sugars, Coffee, Rhums.
FRENCH GUYANA . . . . .	88.240	39.117	12.494.765	12.222.537	Gold, Essential's Oils.

(1) Après l'accord du 4 novembre 1911.



# I. FRENCH PROTECTORATE OF MOROCCO

in 1915.

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## GEOGRAPHICAL SITUATION.

The Morocco is situated in the North West corner of the African Continent, between the  $29^{\circ}$  et  $35^{\circ}$  North latitude. Its area is about 500.000 square kilometers.



FIG. 1. — Native dwellings.

Photo GARAUD.

The Mediterranean climate, softened by frequent showers ; the mountain chains particularly the « Atlas range » whose high summits precipitate the moisture of the sea winds upon the fertile costal

plains of the Atlantic; the natural wealth of its soil and subsoil; its rivers, which are the longest and most regular of all north Africa; these are the geographical considerations which force Morocco upon the attention of those who are interested in the development of new countries.

In addition to all this, its proximity to France is a reason to attract to the new protectorate colonists, merchants, industrial workers and tourists.

### CLIMATE. HYGIENE.

The climate of Morocco is very healthy and agreeable, not so dry as in the other parts of Berbery: temperate on the coast and more uniform in going farther south. On the Atlantic coast, winter is never cold (minima 6 to 8° centigrades above 0°) and summer never very hot (maxima 26 to 30°).

The interior plains (Rharb, Sebou valley, Chaouta, the regions of Fez and Marrakech) are warmer than the average in summer, and in the mountain regions where snow-falls are not uncommon, it is decidedly colder in winter.

On the whole the year is divided in two seasons, the rainy season, which corresponds to winter and last from november to april, and the dry season from may to october.

The climate of Morocco is in all cases suitable to European people who can remain all the year round in the country without any inconvenience to health.

### MARITIME SERVICES.

The ports of the Protectorate, principally Casablanca, are connected with Marseilles and Bordeaux by two French navigation companies using fast steamers of the first class.

Paquet Company gives a fast service between Marseilles et Casablanca (with call at Tangiers), leaving Marseilles the first and the 16th of each month and making the voyage in about 70 hours.

Passenger fares 150 francs, 120 francs, 80 francs.

(1) By international agreement the Mediterranean shore of Morocco is under Spanish protection, with the exception of the zone of Tangiers, which is governed by international agreement, and « Ifni » In the South which is under Spanish influence. All the rest of Morocco is under the Protectorate of France by the terms of the treaty of March 30th 1912.



The Cie Générale Transatlantique, gives a fast and direct service from Bordeaux to Casablanca in 3 days and a half (departure from Bordeaux the 10th and the 25th of each month) Passenger fares 1st class 140 francs, 2d class 110 francs, 3d class 70 francs.

These two companies have also cargo boats calling regularly at the ports of the southern coast, Mazagan, Saffi, Mogador.

There is another route to Casablanca through Spain, by Madrid and Cadix or Algeiras. This service connects at Tangiers with steamers which stop at the western coast of Morocco.

Fares from Paris to Casablanca via Algeiras : 1st class 319 fr. 70, 2d class 235,30, 3d class 145,10.

### INLAND TRAVELLING.

There is in the Protectorate about 600 kilometers of light railways (gauge 0,60). These lines have been established by military engineers for military purposes, but they have been quite recently open to commercial traffic. A complete railway system, at the standard gange and connecting the chief towns of the Protectorate is under survey. Trips to the interior are mostly made on horse-back, by mule, or motor car.

It is advisable for the traveller to arrange for daily expenses amounting from twenty to fifty francs, according to the degree of comfort one desires. The average individual expense is naturally commensurate with the size of the party.

In certain places one can find hotels ; the cost for board and lodging ranges from ten to twenty francs a day.

The most propitious time for travel in the interior is during April, May and June, or in the fall in September and October ; and along the coast from May to October.

The approximate cost for passenger travel by motor car from Casablanca to Fadala is 10 francs, Kenitra 100 francs, Meknès 250 francs, Fez (via Kenitra) 350 francs, Mazagan 125 francs, Marrakech, 90 francs. Transportation of merchandise is effected by camels or mules and costs from 0,80 to francs 1,25 per ton and kilometre. When transported by « arabas » carts 1 franc to 1,50 per ton and kilometre. The prices vary according to the condition of the trails.

Generally speaking one can use the same clothing, kitchen utensils, and household furniture as in the south and south-west of France. Waterproof coats and shoes are serviceable during the rainy season. The use of helmets is advisable in summer.

## TOURING.

In the absence of railroads or well surfaced highways, it might be thought premature to speak of touring in Morocco; nevertheless it would be impossible to overestimate the inducements that the beautiful seasons of spring and autumn offer to the tourists at Moghreb el Aqça, which have for so long remained unaffected by European civilization, It is not only Rabat, the pearl of the Ocean, and Sale, the ancient pirates den, two white towns at the door of the Bou Regreg, dominated by the quaint tower of Hassan, that one can visit with enjoyment, but there are also Mechouar de Meknes built with the ruins of the Roman city of Volubilis; Fez, the holy city of Cherif Moulay Idriss, with its architecture copied after the style of the Alhambra, and its true mediaeval character. All these places are abundant in delightful surprises to the tourist.



Photo LACHARRIÈRE.

FIG. 2. — Kasbah of the Goundafi.

Lastly passing through Marrakech, where the Koutoubia, contemporary with the Giralda of Sevilla, will attract the amateur artists, and the curious old towns of Mogador, Saffi and Mazagan (the portuguese) the visitor can end his tour of Morocco, though not forgetting to visit the wooded slopes of Atlas, where the Berber



tribes, the predominant race of the country, still exist in a primitive social state.

Private companies have organized cruising trips along the Moroccan coast, as well as caravan and motor car excursions to the interior (Casablanca-Marrakech-Mogador-Saffi-Mazagan and return).



Photo SEGONZAC.

FIG. 3. — The gate of the Mellah of Demnat.

## AGRICULTURE.

Morocco is essentially an agricultural country, and the crops and cattle make up nearly all of the exported products.

The land is divided generally into two types; the « tirs », or black soil, which lends itself to a wide diversity of production and the red earth which is especially adapted to the raising of cereals, potatoes and vines. The natives usually confine themselves to the cultivation of the « tirs », while they use the other soils for pasture.

The most widely grown crops are cereals, the production of which encounter in certain regions exceptionally favorable conditions; especially barley, corn, oats, as well as peas, chick peas, beans, lentils and other leguminous plants.

The natives usually divide their farming operations into two parts; the early cultivation called « Bekri » and the late known as

« Mazouai ». For the first (barley, corn, beans, etc.), the sowing is done in the early of autumn and the seed planted in November. The harvest is gathered from May to June. In the second crop, in which maize is the most important, the seed is planted in the spring and the crop is gathered in August.

Potatoes thrive while cotton and vineyards have given promise of excellent results.

Certain aromatic seeds furnish a noteworthy contribution to the exports; carvi, fenugree, cumin, coriandre, etc., being the most prominent.

Fruit trees are plentiful, especially in the suburbs of towns where olive, oranges, lemons, figs, peaches and almonds are grown.

Attention should be called to the argannier, a tree that is peculiar to Morocco and which is found only in the Mogador region. This tree, which resembles the olive tree rarely attains a height of more than 6 metres. The fruit consists of a drupe similar to a large olive with a hard, thick stone for a seed which contains a small, flat almond. The natives make an oil from the argannier which is consumed in the country.

Morocco regions most favorable to cultivation are :

Chaouia, with outlets at the ports of Casablanca and Fedala ;

Rharb (Rabat-Sale, Kenitra) ;

Sebou valley (Mehedyà, Kenitra, Rabat-Sale, Meknès, Fez) ;

Doukkala (Mazagan, Azemmour) ;

Abda (Saffi) ;

Haouz de Marrakech (Marrakech, Mazagan, Saffi, Mogador).

The principal centres open to colonization are :

1° Rharb : Arbaoua, Souk-el-Arba du Rharb, Mechra-bel-Ksiri, Kenitra ;

2° Vallé of the Sebou : Mehedyà, Kenitra, Rabat-Sale, Petitjean, Dar-bely-Hamri, Meknès ;

3° Hinterland of Rabat Sale (Zaër, Zemmour) : Rabat, Sale, Temara, Oued-Yquem, Bouznika, Monod, Tiflet, N'Kreila ;

4° Chaouia : Casablanca, Fedala, Ber Rechid, Boulhaut, Bouche-ron, Mediouna, Ben-Ahmed, Settat, Oulad-Saïd, Mechra-ben-Abbou, El-Boroudj ;

5° Doukkala : Mazagan, Azemmour, Sidi-Ali ;

6° Abda : Saffi, Oualidia ;

7° Haouz : Marrakech, Kelaa, Mogador.

The most fertile and best irrigated regions are : The valley of the Sebou and the Rharb, where some colonists have located with their families. It should be advisable to those intending to bring their family to build a comfortable shelter in advance.

Farming in Morocco necessitates some technical knowledge which varies with the kind of cultivation one wishes to follow and

a capital more or less substantial. The cost of 1,000 hectares or 2,000 acres for extensive cultivation may vary from 250 to 375 francs the hectare near the towns and from 75 to 100 francs in the interior of the country.



FIG. 4. — Natives.

Photo SEGONZAC.

Taking into account the actual state of the country, that is to say the lack of transportation and the primitive conditions of the ports, it would be imprudent to undertake to cultivate a large track of land without the expenditure of a large sum of money.

### STOCK BREEDING.

Stock raising is carried on by the natives in nearly all parts of the country. They use for grazing the vast tracts of land that are not under cultivation. Oxen, sheep and goats are found everywhere and furnish well appreciated products for export. Wool, hides and goat skins are exported annually in large quantities.



## FORESTS.

The interior of Morocco is rich in species of timber, such as cedar trees, walnut, cork trees, arganier, thuya, and arar for building, cabinet-making and industrial work.

The regions near the sea coast are by contrast much less wooded. Nevertheless there are two fine forests, one on the boundary of the Chaouia, the other; Mamora, which is very important, not far from Rabat.

Prior to the Protectorate these forests were ruthlessly exploited by the natives who burnt out or chopped down the trees for their personal use. In order to save the forests of Morocco, rigorous measures analogous to those in effect in Tunis concerning the exploitation and exportation of woods, will be put in force in the near future.

## MINES.

Indications of copper, iron and lead suitable for bearings have been found in the Sous as well as in the Anti-Atlas; silver-lead in the Riff and Mid-Atlas; rock salt in the Sebou valley, etc., but as a matter of fact the richness of Morocco from a mining standpoint is still a matter of study, and it is necessary to await the development of the means of communication and transportation before the minerals can be exploited.

In the case where a country has just been opened to European influence it is advisable that prospecting should be carried on with prudence and forethought; and before undertaking operations one should obtain reliable and trustworthy information.

The development of mines in general is regulated by the « dahir » of January 19th 1914. The regulation applies especially to mines while quarries and bogs are under ordinary police supervision.

In general, considerable liberty is allowed in the prospecting of mines but this exclusive right is subject to a tax of 0,20 centimes a hectare a year, in an area of from 1 to 4 square kilometres. This right is negotiable on the payment of a tax of 300 francs.

The exploitation licences, given by « dahir cherifien », are good for areas of from 100 to 200 hectares and subject to the following charges: 500 francs tax; an annual tax varying from 1 to 3,50 per hectare according to the kind of ore; in addition there is at export duty of 3 to 10 0/0 *ad valorem*. The deposits of phosphates, nitrates, etc., are obtained only at public auction. The cherifian govern-

ment reserves the rights to the salt deposits. A commission has been created to resolve litigious cases prior to the enactment of mining regulations.

For the time being all prospecting has been suspended.

### COMMERCE.

The maritime commerce of French Morocco has more than doubled in five years, as the following figures whill show.

	Imports Francs	Exports Francs	Total Francs
1909 . . . . .	45,579,485	36,745,240	84,324,725
1910 . . . . .	40,646,590	29,644,668	70,291,258
1911 . . . . .	52,899,202	55,032,778	107,931,980
1912 . . . . .	92,479,340	58,087,383	150,566,723
1913 . . . . .	149,794,979	30,865,639	180,660,618

The chief articles of french and foreign importation can be divided into two distinct groups :

- a) Articles for the natives ;
- b) Articles for Europeans.

The principal articles for the natives are : sugar, cotton goods, tea, candles, semolina, soap, spices, hardware, silks, silk and cotton threads.

The most common articles for consumption by the Europeans are : building materials (woods, iron, cement, lime, bricks), etc., food stuffs (spices, preserves, wines, etc.), flour, grains, clothing, machinery and similar articles, carriages, agricultural implements, hardware, tobacco, perfumery, Paris products, furniture, gazo-line, etc. The natives are purchasers of certain articles commonly used by the Europeans.

The exports comprise live stock ; animal products (horse and goat hairs, wools, eggs, skins) : cereals and grains (wheat, barley, maize, beans, lentils, lima peas, alpistes, lin seed, coriandre, cumin, fenugrec) ; fruits (oranges, almonds, dates, nuts) ; gums ; industrial plants (resinous shrubs, palm-trees, hemp, rose leaves, alfa) ; olive oil ; manufactured articles (babouches, leather works, haiks, djellabas, wool carpets, copper works, guns, etc.).

### IMMIGRATION.

The tide of French and European population flovng to Morocco is the most remarkable that French Colonial history narrates. It

was not until twenty five years after our arrival in Tunis before this last country had acquired a French population equal to that which Morocco has to day. By 1st of January 1914 the French population of the protectorate amounted to 26,000 souls out of a total European population of 44,000 souls.

The principal towns sought by the colonists and immigrants are : Casablanca (31,000 Europeans) ; Rabat-Sale (5,000) ; Kenitra (1,500) ; Mazagan (1,200) ; Saffi (700) ; Mogador (650) ; Marrakech (900) ; Meknes (550) ; Fez (550) ; Oudjda (4,300).

### **BANKING AND MONETARY SYSTEM.**

Morocco has a monetary system peculiar to itself, The unit is the « peseta hassani » which has an actual value in exchange of about 0 franc 80, but french, english and spanish coins pass current in the country, especially in the coast towns and are accepted by the natives.

There is one State Bank with branches in the most important centres, where several large private Banks have also established agencies in the past few years.

General information as to French Protectorate of Morocco and particulars about trade, commerce, agriculture in the Cherifian Empire can be obtained from the « Office du Gouvernement Chéri-fien et du Protectorat de la République française au Maroc », 34, Galerie d'Orléans, Palais-Royal, Paris.

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## II. ALGERIA.

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### GENERAL INFORMATION AND PHYSICAL GEOGRAPHY.

ALGERIA is bounded on the north by the Mediterranean Sea, on the south by the Sahara desert, and on the east by the Empire of Morocco. The country, like Morocco, is alternately under the influence of damp north-west winds coming from the Mediterranean Sea and from the Atlantic, and the dry and burning south and south-east winds, which bring drought and barrenness with them. Algeria's mountains consist of two chains parallel to the coast : one near the sea, the other near the desert. These two chains are 150 to 200 kilometres apart in the province of Oran, but they get nearer and nearer until, in Tunis, they are separated only by the valley of Medjerda. These chains of mountains, from 1,500 à 2,000 metres high, form the limits of three very distinct regions ; the Tell running in a northerly direction from the neighbouring chain (the Atlas Tellien) and pointing towards Europe. Permanent rivers, or wades (plural form waddy), are plentiful. The most important one is the Cheliff (695 kilometres long). We must also mention the Tafna, in the province of Oran (145 kilometres), the Sig (215 kilometres) and the Sahel (200 kilometres). In the province of Constantine are the Seybouse or Wade Cheff (232 kilometres), and the Wade el Kebir (245 kilometres).

All this region is suited to a great variety of crops similar to those which characterise the whole Mediterranean region, namely, wheat, corn, cereals, olives, vines, fruit trees, agrumes, etc.

Between the two mountain chains, at an altitude of 500 to 1,100 metres, are the high tablelands or plateaux. These cover a surface of 10,000,000 hectares, and are partly composed of dried up steppes only fit for sheep grazing. Here grow prairies of Alfalfa grass, and occasional depressions retain the water that comes down, and form the salt lakes, called chotts or sebkas, which are often dried up in summer.

The high tablelands can be cultivated, as well as the Tell, in

periods when, for some reason or other, there is no drought, but this is exceptional.

At the south of the second chain of mountains, called the "Saharien Atlas," is the desert, where no cultivation is possible except oasei.

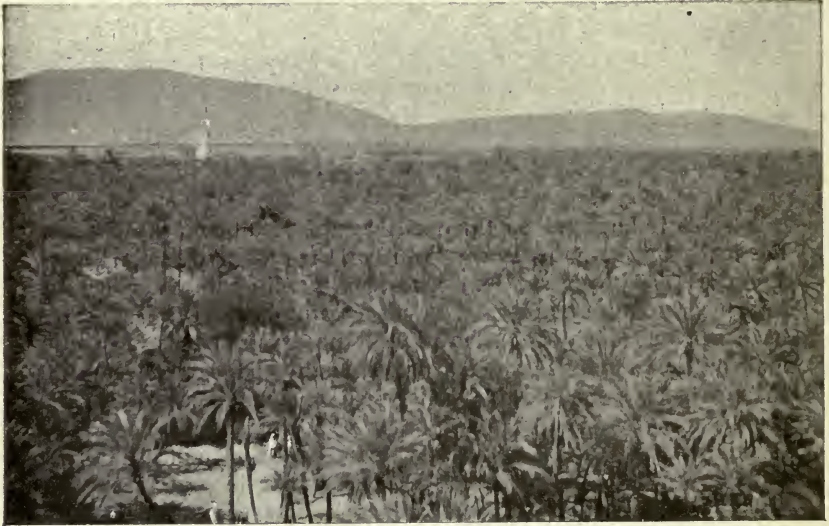


Photo BOURGAULT.

FIG. 5. — Palm-trees at Zenega.

The total length of coast-line in Algeria is 4,100 kilometres ; it is rocky, with a few gulfs, where the chief ports are situated. They are : The Gulf of Oran, where are situated the bays of Oran and Arzew ; the Gulf of Algiers ; the Gulf of Bougie, with the bays of Bougie and Djidjelli ; and the Gulf of Philippeville, with the bays of Collo, Stora and Bone.

Algeria has 5,563,828 inhabitants, who belong to very different races. There are 562,931 French citizens, including 188,068 naturalised foreigners and 70,271 native Jews ; 4,711,276 Arabs and Kabyles, French subjects, and 218,362 foreigners, including 2,375 Tunisians, 23,115 Moroccains, 135,150 Spaniards, 36,795 Italians, besides 20,927 foreigners of different nationalities.

The natives, namely, the descendants of the people who inhabited Algeria in 1830, are the Jews, who have been made naturalised French subjects, by an Act of Parliament of 24th October, 1870, and the Mussulmen (Mohammedans). The latter belong to

very distinct races, *i.e.*, the Berbers, the Arabs, the Moors, the Koulourlis, and the Negroes.

The Berbers are not a homogeneous race. They are considered, however, in the history of the world, as the aboriginal inhabitants of the region, driven by the successive invaders to the most inaccessible parts of the country. They are the Kabyles, Chaonias of the Aures, Mozabites, and the Tauaregs.

The representants of these ethnical groups speak very similar dialects, which proves their relationship. The number of individuals who speak these dialects is reckoned at 800,000.

The Arabs are the sons of the conquerors who invaded the country in the eighth century, led by Hassan and Sidi Okba. They are said to constitute only the sixth part of the Mussulman population. The other races are secondary.

The Moors or Hadars, town dwellers, come from the intermaying of several races who came into the country. Their complexion is pale, the hair and eyes black.

The Koulourlis are the sons of Turks and women of the country. They are more energetic and prouder than the Moors, whom they resemble to a certain extent.

The Negroes are the descendants of the ancient Soudanese slaves.

### CLIMATE.

The climate of the Tell is the same as in the Mediterranean region, with a season of vegetation in the spring and a shorter one in the autumn, between which are two periods of rest, one at the end of summer, caused by the dryness, and the other in winter. The climate of the Tell is warm, as in Provence. It is very healthy, and people come to pass the winter there.

Marshy lands have been, for a long time, one of the scourges of Northern Africa. The transformation of those parts which had not been worked for a long time, into arable land, has rendered the country normally healthy once more.

The drying up of the marshes and the war against mosquitoes, actively conducted, will, it is to be hoped, render sanitary the few spots where fever still prevails.

The climate on the steppes is very dry, with great variations of temperature, from one season to another, or even within the space of twenty-four hours. In the summer the thermometer may indicate 40° (Centigrade) in the shade and in the winter as low as 8-12° (Centigrade). The temperature varies sometimes 25° to 30° in one day; this climate, in one word, presents the characteristics of



a continental climate. So does the Sahara region, but much more so on account of the extreme dryness.

The temperature reaches sometimes 50° (Centigrade) in the shade in summer and 8° (Centigrade) in winter. The variations are more than 30 degrees.

Rain is extremely rare there, and though it comes down very heavily at times, it is very much localised, so that in one given spot of the desert it might not rain for 10 years. Only subterranean sources of water exist, and, where it is possible to utilise them for the purpose of cultivation by irrigation, date trees are planted, under whose shade numerous plants can grow. Such a plantation is known as an oasis.

The boring of artesian wells has also made possible the creation of new palm tree plantations.

### POLITICAL GEOGRAPHY.

Algeria was successively conquered by the Carthaginians and the Romans. It enjoyed three centuries of prosperity under Roman rule, but after the invasions of the Vandals, the Berbers constituted themselves into separate independent States, and the Byzantine power was only exercised, effectually, over the province of Constantine. The conquests of the Arabs resulted in the conversion of the Autochthons to Islamism. Up to the sixteenth century the history of Algeria is very confused, and remarkable for the bloody wars between the different religious sects created principally by the Berbers, and afterwards by the intervention of Spain.

Charles the Fifth of Spain carried out his conquest of Tunis, but did not succeed in preventing the founding of the Kingdom of Algiers by Kheir Eddine Barberousse, which existed until the nineteenth century. This kingdom of pirates was governed by Deys, who, in the eighteenth century, freed themselves from the power of Constantinople.

The French landed at Sidi Ferruch on the 13th June, 1830; on the 4th July Algiers was taken. The most remarkable phases of the war were the resistance of Abd el Khader, 1830-1847, definitely conquered by Marshal Bugeaud; the subjugation of the great Kabylie in 1857 by Marshal Randon; and the repression of the insurrections of 1870 and Bou Amama in 1872. The country has been at peace since 1884.

Algeria is actually an integral part of the French territory divided into the three provinces, Algiers, Oran and Constantine, which are similar to French departments,

The southern territories of these departments form military dis-

districts, at the head of each being a General of Division ; the organisation is of a special character.

The whole of the colony is under the authority of a Governor General, who is head of the civil administration and charged with the preparation of the Budget.

With the Governor General are a general secretary and two councils, the " Government Council ", composed of high officials, and which sits permanently ; and the " Superior Council, " charged with the examination of the Budget and the proper apportioning of the taxes.

The Financial Delegations created in 1898 are a kind of Parliament, voting the Budget before it is submitted to the Superior Council. This assembly is composed of 24 colonial delegates (members), 24 delegates representing the tax payers not colonists, and a delegation of native Mussulmen, consisting of 21 members, six of whom are Kabyles.

The chief towns are : — Algiers, 172,397 inhabitants, the port's trade amounting to 4,000,000 tons annually ; Oran, a Mediterranean port 123,086 inhabitants, annual trade 2,000,000 tons ; Constantine 65,473 inhabitants, 87 kilometres from the coast.

Other principal cities are Mostaganem, Tlemcem, Siddi-bel-Abbes, Bougie, Philippeville and Bone.

## MEANS OF COMMUNICATION.

Algeria is joined to the continent by numerous services of boats belonging to the Compagnie Générale Transatlantique.

There are four weekly services each way plying between Algiers and Marseilles, two between Bone and Marseilles, one between Bougie and Marseilles, two between Oran and Marseilles, and two between Philippeville and Marseilles.

The Compagnie de Navigation Mixte joins Marseilles, Nice and Port Vendres to Algiers.

The Société Générale des Transports Maritimes has a service running three times a week between Algiers and Marseilles.

Algiers has also a direct service with Barcelona, run by the Islena Maritima, and with Genoa by the Nederland Line and the Nord-deutscher Lloyd.

The ports have also communication with one another and with Moroccan and Tunisian ports, this service being carried out by regular coasting vessels.

The total mileage of interior roads amounts to 40,000 kilometres and of railroads to 4,060 kilometres. The roads are very good, and

suitable for automobile traffic. On many of them there are "diligence" services.

Algers is joined up with Oran and the Moroccan frontier on one side at Ghardimaou, on the other by a main railway line, which belongs partly to the Algerian State, the Compagnie Paris-Lyon-Méditerranée and the Compagnie Bone-Guelma. Expresses run between Tunis and Oran. From this central line start branch lines to



Photo CROUZET. *Illustration.*

FIG. 6. — Port of Oran.

the northern ports and towns : Bone, Philippeville, Bougie, Tizi-Ouzou, Mostaganem, Arzew, and interior branch lines towards the south to Tebessa, Khenchela, Touggourt, Berrouaghia, Tiaret, and finally Colomb Bechar.

### MINERAL PRODUCTS.

Algeria is rich in minerals, principally in the province of Constantine. Very beautiful marbles are found, especially onyx, which is seen in rich deposits around Tlemcen and by Constantine (Aïn-Smara). The export value of these products does not exceed



200,000 francs, but phosphates from the Tebessa region (Constantine) were exported in 1913 to the value of 13,158,000 francs, the tonnage being 438,601 tons.

Salt is very abundant, principally in the sebkas, where it is collected, but is not exported in large quantities.

Among other mineral products found in Algeria are petroleum, zinc, lead, haematites, galena, calamine and mercury.

In 1913, 1,312,814 tons of iron were exported, worth 18,134,000 francs. Of lead, 30,518 tons, worth 4,272,000 francs, and 82,077 tons of zinc, worth 13,134,200 francs, were also exported.

### ANIMAL PRODUCTS.

The fauna of Algeria is abundant and varied. In the mountains there are large tailless baboons (*Pithecus innuus*).

The lion is nearly extinct, but the panther (harmless to man) is plentiful. Jackals are numerous, and the tiger cat, the wild cat, the caracal (lynx), the cheetah, the fox, the Sahara fox, etc., are also to be found. The wild boar, which is abundant, does a lot of harm to the crops. Stags, chamois, gazelles, antelopes and wild rams (mouflons) are also to be found.

Among the rodents are the jerboa, goundi (*Ctenodactylus Masson*), the hare and the porcupine.

Birds of all kinds are plentiful. So are reptiles, six species being venomous, especially the terrible Naja or cobra (*Naja Haje*) of the south, the bite being fatal. Deaths from this cause are, however, very rare.

Fish is very abundant around the coasts, the species corresponding to those in the southern seas of Europe.

Fishing is carried on extensively, and fish is sent in large quantities to the principal towns. Fresh water fish is also plentiful. The export of fish in 1913 amounted to about 6,000,000 francs, divided up as follows:— Fresh fish 845 tons, worth 837,000 francs; dry fish, salted and smoked 3,274 tons, worth 2,622,000 francs; canned fish, sardines, etc., 1,663 tons, worth 2,070,000 francs.

The cray fish is caught on the rocky part of the coast.

Among the arachnidans, or scorpions, certain species in the south are dangerous. Insects, which are also very numerous, do not differ in any particular respect from those of Europe.

Ants are a veritable pest, as they attack the crops.

Among the most harmful insects are the locusts, which devastate whole districts in a very short space of time.

Other destructive insects are, in particular, the wine aphis, the cockchafer or maybug, and the phylloxera.

Coral is gathered by fishermen on the coasts of Algeria, but the amount exported is insignificant.

Domestic animals are numerous.

Sheep constitute one of the principal resources of the country. They even thrive well in the steppe region, where only very meagre pasturage exists. The most common breed is the Barbary sheep, with a fine tail, the flesh being excellent.

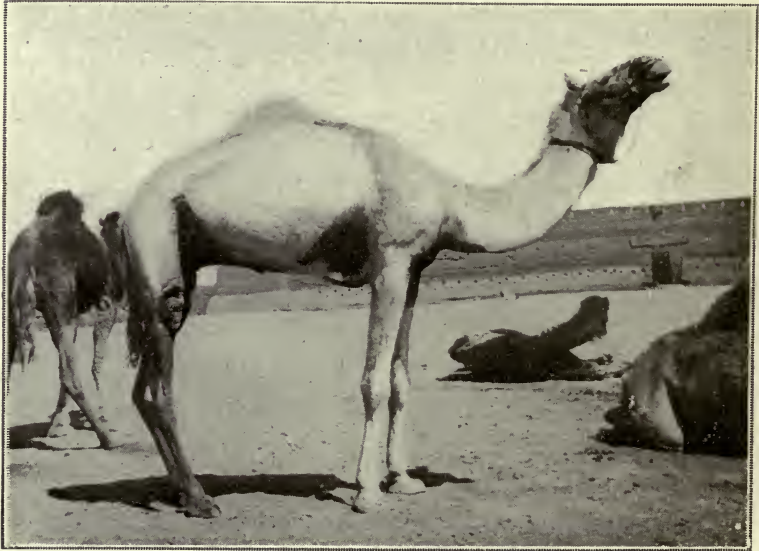


FIG. 7. — Mehari.

There are also interesting variations in this breed, mostly as to quality of the wool. The average weight of an Algerian sheep is 48 kilos (105·6 pounds).

There are actually in the country more than 8,000,000 head of sheep. In 1913, 1,190,348 head were exported, representing a value of 49,756,000 francs.

The oxen belong to the Guelma breed, are small, active and alert, but gentler than those of Europe. The coat of this breed is a faun-grey, the head brown about the eyes, and the muzzle of a light colour. They feed on pasture lands during the whole year. Algeria exported, in 1913, 27,171 head of beef, valued at 7,160,000 francs.

Horses belong to two different breeds, the Barbary and the Arab breeds. The Barbary horse has a short and square head, a straight or, perhaps, slightly curved forehead, long, thin slender ears, eyes high in the head, and a straight elegant neck often surmounted by

a beautiful mane. The back is broad and concave, the rump well developed, the chest broad and well developed. The shoulders are full and muscular, the haunches slightly salient and inclined, the forelegs rather light, and the tail luxuriant and attached low.

The thoroughbreds, which are extremely rare, have slender muzzles with very dilated nostrils. These animals are quite domesticated. They are very sure-footed in mountainous regions.



Photo BEAUFORT.

FIG. 8. — Kiss Oued and El-Haimer market.

The Arab horse, which is larger and stronger, is rare in Algeria. No other really pure types are to be found.

Outside these two breeds, horses vary according to the region. The best are to be found on the high table lands of the province of Oran. In 1913, 1,341,000 francs worth of horses, mares, cobs, and fillies were exported. Of this sum, horses are represented by 936,000 francs (in value) comprising 2,285 head.

Mules and donkeys are also very plentiful in Algeria, the former being exported to the value of more than 1,000,000 francs annually.

Goats and pigs are bred, generally, all over the country.

In the meridional regions, as well as in the Sahara, the dromedary is to be found, being a camel with a single hump. Two leading varieties exist, the dromedary of Somnee, which is large-bodied and



of a dark fawn colour, and the ruming dromedary, or “ Mehari ”, which is smaller and sometimes entirely withe.

The rearing of these animals is very difficult, and in certain districts they have become rare on account of the number taken and used up in the Sahara.

Ostrich have also become very rare and, up to now, efforts to rear them have been unsatisfactory.

## VEGETABLE PRODUCTS.

The most important product of the soil is the grape, which of late years has been a source of wealth to Algeria.

Algeria produces table wines, certain of which are worthy of mention; also liqueur wines. In spite of the high temperature in the autumn it is possible, by taking certain precautions, to realize a good vintage. The vines cover to-day more than 160,000 hectares. In 1913 Algeria exported 4,758,562 hectolitres of ordinary wine (*vin ordinaire*) in casks. (1 hectolitre, 22,009,668 imperial gallons). The value of this exportation was 146,514,000 francs.

Cereals, especially wheat and barley, are cultivated everywhere in the Tell. The local wheat has a hard grain and makes excellent semolina. The wheat is cultivated both by natives and Europeans. In 1913, 116,643 tons of wheat in grain were exported, valued at 33,360,000 francs.

Barley comes next, 94,530 tons, worth 16,826,000 francs, being exported. Then comes hay, with 53,199 tons, valued at 3,192,000 francs. Maize, sago and millet are also cultivated, but on a much smaller scale.

The cultivation of tobacco has grown enormously, being very remunerative. Kabylie seems to be the best district for this crop, the tobacco grown there being of very good quality. The annual production is over 9,000,000 kilos. Tobacco is exported in the form of cigars, cigarettes and in the leaf. In 1913, 13,000,000 francs worth were exported in various forms.

The cultivation of vegetables is carried out successfully along the coasts of Algeria, and has increased greatly, not only on account of the development of the large towns, but also because the wild climate of the coasts permits the vegetables to be grown so early in the season that they arrive in Europe as the earliest spring vegetables.

The following is a table of the exports, with their values, in 1912 :—

	Tons	Value
Artichokes ..	6,851 ..	2,055,000 francs
Broad Beans ..	179 ..	35,000 —
French Beans ..	6,908 ..	3,462,000 —
Peas .. ..	3,434 ..	1,031,000 —
Tomatoes ..	7,078 ..	3,053,000 —
Other Vegetables	797 ..	160,000 —

Total export value, 8,796,000 francs.

To this total must be added potatoes, of which 21,564 tons, worth 4,313,000 francs, were exported in 1913.

Fruit is also exported. *Agrumes* are cultivated in the Tell, and also in the oases of the south. Figs grow in the Tell and in the mountainous regions. Dates are the main source of wealth in the southern oases. The best come from Ouargla, Wade Rirh and Biskra. Eating grapes, apricots and almonds are also cultivated, but on a smaller scale.

The following is a list of fruits exports in 1913 :—

	Tons	Value
Lemons and Oranges.	3,646 ..	839,000
Mandarines .. ..	6,753 ..	2,160,000
Carob bean .. ..	2,658 ..	318,000
Eating grapes .. ..	10,717 ..	4,501,000
Eatings figs .. ..	8,872 ..	2,750,000
Dates .. ..	6,648 ..	4,720,000

The cultivation of the mandarine has developed greatly during the last few years. In 1906 the export value of this fruit was only 1,007,000 francs. Olive are also cultivated in Algeria, but not to such a great extent as in Tunis. The Kabylie district is, however, peculiarly adapted to the growth of olives.

The export of olive oil rose in 1913 to 1,571 tons, worth 2,042,000 francs.

The rose geranium is extensively cultivated in certain regions, particularly around Algiers. The importance of the industry, which it is very easy to establish or discontinue, depends chiefly on the state of the essence market, In 1913 Algeria exported 38,380 kilos of geranium essence, worth 2,379,000 francs.

Cotton has been grown in Algeria since 1850. The events, occurring in America, which brought about the cotton famine, raised the price considerably, thereby making the cultivation of cotton very remunerative until 1895. At present, cotton is grown only in certain regions on the coast, where the plentiful rains (heavy) conduce to its proper growth. Some 142 tons, worth 329,000 francs, were exported in 1913.

## FORESTS AND STEPPES.

Algeria possesses forests of varying character and density. Drovers of cattle, and forest fires, have damaged many of them.

The most important tree is the oak cork tree (*chêne-liège*), which grows at any altitude up to 1,300 metres. About 500,000 hectares in all are under oak cork. All the forests are not actually exploited, but, nevertheless, cork, in all its forms, was exported to the amount of 41,914 tons in 1913, worth 13,033,000 francs. Of this amount cork in flat pieces represents 17,883 tons, worth 9,478,000 francs. The oak cork tree is found, chiefly, in the provinces of Algiers and Constantine:

The cedar is found on the mountains, growing between the altitudes of 1,300 and 1,800 mètres. The area of cedar forests in Algeria is about, 40,000 hectares.

The pine of Alep, the evergreen oak and the zeen oak (*chêne zéen*) are equally very abundant.

In the steppes is found the alfalfa (*Stipa tenacissima*), which is used for paper making and for the manufacture of articles made of esparto, cords, baskets, etc. This plant is of great importance, covering a region of about 4,000,000 hectares of ground, which is known as the "Alfalfa Sea". This alfalfa grass grows in tufts and only reproduces from the stems (roots). A large commerce is carried on in this product, 113,648 tons, worth 8,523,000 francs, being exported in 1913.

Another product, which is gathered principally by the natives, and worthy of mention, is a vegetable fibre furnished by the leaves of the dwarf palm trees (*Chamærops humilis*). The latter is very abundant in Algeria, and, though only gathered by the natives, is exported in large quantities. In 1913 59,460 tons were exported, worth 8,324,000 francs.

To terminate this review of the Algerian products, we must mention the exportation of bark for tanning purposes, which rose in 1913 to 10,695 tons, worth 1,926,000 francs.

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### III. TUNIS.

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#### GENERALD AND GEOGRAPHICAL.

TUNIS occupies the north-eastern extremity of the mountainous région of North Africa, otherwise called Africa Minor or Moghreb. North and east it is bounded by the Mediterranean, south-east by Tripoli, and on the south and south-west touching the desert of the Sahara, and separated on the west from Algeria by an artificial frontier running directly north and south, except just at the south-west where it describes a turn westward, embracing the Djerid région.

It is difficult to ascertain the exact superficial area of the country, as its limits towards the south are very badly defined. By making its southern limit, however, the line of the posts, one may take it as 130,000 square kilometres. It is a parallelogram, the greatest width of which is 550 kilometres and the least 250.

Tunis is traversed by various chains of mountains ; the northern chain, being a continuation of the northern border of the high Algerian Plateau, separating the basin of the Medjerda from the little coast rivers running into the Mediterranean, and including the mountains of the Khroumirie, Nefzas and Mogods. Secondly, a central group, a continuation of the Atlas Mountains of the Sahara, occupying the centre part of the country with a general trend from south-west to north-east, from Tebessa to Cape Bon. The principal peaks are the Djebel Zaghouan (1,294 m.), the Djebel Bargou (1,280 m.), and the Djebel Serdj (1,375 m.). From this group there run less important spurs towards the north and south. There is hardly any district in Tunis which can be compared to the high plateaux of Algeria. Between the two mountain masses flows the Medjerda, the principal river of the Colony, which, taking its rise in Algeria, enters Tunis at Ghardimaou, and empties itself into the Mediterranean in the north of Tunis. It runs through a wide and fertile valley, where the stratum of arable soil is very deep. Besides this, each mountain is separated from the other by rich and fertile valleys.



Along the coast is found the region of the Sabel, the ancient Byzantium, of which the wealth is proverbial, and which is particularly adapted for the culture of the olive. Mor to the south is the pre-desert region, where the date palm begins to appear ; with the oases of Gafsa and Gabes. These are plains, the depressions of which are occupied by salt lakes (chotts or sebkas) which evaporate slowly, leaving crystallisations of salt in marketable quantities. These salt lakes, as in Algeria, form the northern limit of the Sahara desert. There are other lakes in different parts of Tunis, notably in the neighbourhood of the City of Tunis. The groups of oases of the Djerid, the Souf and the Nefzaoua, border this Saharan region on the north.

Tunis as a population of about 1,900,000 to 1,950,000 inhabitants, consisting of 1,740,000 natives, 50,000 Jews, 88,000 Italians, 46,000 French and 11,000 Maltese. The race question in Tunis is a very complicated one by reason of the numerous powers which have held dominion over the country. The natives, generally classed under the title of Arabs, really belong to different ethnological groups, but they all profess the same cult of Islam. These natives may be divided into Berbers and Arabs. The Berbers occupied Tunis before the Phœnician conquest, but they were mingled, time after time, with other races coming from Europe at periods of great invasions, which races correspondant nearly to the Andalusian type. In general this whole population is agricultural and sedentary. They do not inhabit the more fertile regions of the country, which are also the most accessible, because they fled before the Arab incursions and the exaction of the Bey's administration of earlier times. The Arabs invaded the districts and the towns which were easy of access. By preference they are nomads or traders, and form the native citizenship of the large towns. They have oval faces, with fine features, aquiline noses and black hair, being the exact inverse of the Berbers, who have bolder features, and are not infrequently fair in complexion.

The French occupation, bringing security and redress of abuse, especially fiscal abuses of administration, has helped to attract these sedentary tribes from the inaccessible regions to which they had fled to the more fertile districts.

### CLIMATE.

The various districts are not sharply divided like those of Algeria, because, as we have seen, the regions of the Tell, the high plateaux, and of the Sahara, are far from being clearly distinct from one another. The Khroumirie and the country of the Mogods resemble



# TUNISIE



Em. LAROSE Ed. PARIS

Georges More

Steoro. GUILLOT. Tunisie.

Fig. 9. — Map general Tunisie.

the Kabylie to a certain extent, but the peaks are not so lofty and the winters are less rigorous, although the rains are more abundant. The region of the high plateaux hardly exists in Tunis, and it is only between Souk el Djemaa and the Kessera that one encounters a desert climate, cold in winter and hot in summer. All these regions, therefore, as well as the north of Sahel, have a healthy Mediterranean climate, characterised by a long period of spring vegetation, interrupted by the drought of summer, which only lasts from July to the end of September, though the rains end in May, and which is succeeded by a second period of vegetation, the short autumnal season, broken up by the advent of winter. The rain is abundant and violent at the end of autumn. If one follows the Sahel towards the south the climate becomes insensibly modified, and gives place, little by little, to a desert climate.

Tunis is a very healthy climate, in which no particular disease exists. The great heat of a dry atmosphere does not produce the same inconvenience as it does in tropical climates. One may contract fevers in certain districts, but Europeans are easily acclimatised.

### POLITICAL GEOGRAPHY.

Tunis was formerly called Lybia, and had attained, before the advent of the Phœnicians on African territory, a degree of civilisation sufficiently advanced to permit of the building of towns. The founding of Carthage by Dido, the Phœnician princess, took place in the 11th century B.C. It is not necessary to remember that this town was of sufficient importance to dispute with Rome the empire of the world. After three memorable wars it was destroyed, and then rebuilt by the Romans.

Christianity was introduced early and spread very quickly, but Tunis was soon the prey of the Arabs, who conquered it in the year 698. To the period of Arab occupation succeeded another phase of Tunisian history, during which the Berbers governed the country. Tunis was very prosperous at this time, especially in the reign of El Mostanser Billah, against whom St. Louis directed a crusade, at the end of which he died at Carthage, in 1270.

In 1533, Charles V., disturbed by the advance of the Turks in the Mediterranean, took possession, in his turn, of Tunis. The Spanish occupation was very short, as in 1574 the Turks seized the country, at the head of which they placed a Dey. Hussein ben Ali, Agha of the Janissaries, in the 17th century, concentrated the whole power in his own hands, and shook off the yoke of Constantinople.

France intervened in Tunis in 1881, following on the constant disturbances which took place in Khroumirie, on the Algerian Tunisian frontier. A first treaty was signed on the 12th May, 1881, by the Bey Mohammed-es-Sadok, and the Protectorate was definitely established in 1882 at the beginning of the reign of Ali Bey.

The Regency of Tunis has preserved its monarchy, the sovereign being at the present day His Highness Mohammed en Naceur who retains all his authority over his subjects. On the other hand, the Bey has ceded to France his military and diplomatic power, and has given them the right of direct control over the administration of his finances. The powers of the Republic are exercised by a Minister Plenipotentiary, a Resident General, who is at the same time the Minister for Foreign Affairs for the Bey. He exercises his powers under the control of the French Minister for Foreign Affairs.

Tunis is divided into Provinces or Controls, administered by native functionaries called caids, with whom is placed a Civil Controller, who is Vice-Consul for France. The Capitulations exists no longer in Tunis, and French justice is competent for everything that concerns the European residents.

The principal towns are Tunis (capital of the Regency), a port situated about 10 kilometres from the sea on a lake connected by a canal to the port of La Goulette. An important concourse of Europeans is established side by side with the old native city. Tunis has 200,000 inhabitants, of which 100,000 are natives, 50,000 native Jews, 44,000 Italians, 17,000 French, and 5,000 Maltese.

Bizerta is a well-conducted port on the Mediterranean.

Sousse, the principal town of the Sahel, is a Mediterranean port, situated 150 kilometres south of Tunis.

Sfax, a port of the Sahel, is situated 125 km. south of Sousse (Susa), and has 75,000 inhabitants.

Kairouan, the holy city, is situated 55 km. west of Susa in the interior:

Beja is 121 km. west of Tunis, and has 12,000 inhabitants.

## MEANS OF COMMUNICATION.

It is extremely easy to get to Tunis, that is with its ports, connected with Marseilles, Malta, Palermo and Tripoli by French and Italian postal maritime services. Marseilles has an almost daily service to Tunis, which is assured by the Cie Generale Transatlantique, the Cie de Navigation Mixte (Touache Cie), and the Societa Nazionale di Servizi Marittimi.



In the interior of the country there are 1,800 km. of railway lines, of which the following are in actual use :—

Cie Bône Guelma :—

Line from Susa to Henchir Souatir.

- Tunis to La Laverie and Tunis to Bizerte.
- Tunis to Slata.
- Mateur to Beja.
- Tnis to Nabeul.
- Tunis to Kalaa Djerda and Kalaat-es-Senan.
- Tunis to Bona (Great Algerian line).
- Tunis to Suza Sfax and Gabes.
- Souk Ahras to Tebessa.

Cie des Phosphates de Gafsa :—

Line from Sfax to Gafsa and Henchir Souatir, with branches to Mettlaoui and Tozeur.

Tunis also possesses a system of 4,700 km. of very good roads, which lend themselves to motor traffic. As a guide we give below a table showing the distances separating Tunis from the principal towns of Europe and Africa, by the most accelerated services :—

From Paris ..	36 hrs.	From Naples ..	24 hrs.
— London ..	41 —	— Palermo ..	12 —
— Berlin ..	50 —	— Trapani ..	8 —
— Vienna ..	59 —	— Algiers ..	26 —
— Geneva ..	30 —	— Biskra ..	22 —
— Frankfort ..	39 —	— Constantine ..	13 —
— Munich ..	44 —	From Tunis to—	
— Cologne ..	41 —	Susa ..	4 <sup>1</sup> / <sub>2</sub> —
— Basle ..	35 —	Kairouan ..	6 <sup>1</sup> / <sub>2</sub> —
— Marseilles ..	24 —	Sfax ..	10 —
— Milan ..	45 —	Gabes ..	17 —

### MINERAL PRODUCTS.

The principal mineral wealth lies in the phosphates found in the neighbourhood of Gafsa. These natural phosphates are exported in increasing quantities, and in 1912, 19,101,979 quintals, value 47,754,940 francs, were exported, as against 15,393,968 quintals, value 38,384,920 francs in 1911. The principal importing countries are in order of importance, France, Italy, England, Germany, Belgium and Holland.

Salt is gathered from the regions of the lakes (chotts and sebks).

Lastly, several zinc mines are being worked at the present moment.

## ANIMAL PRODUCTS.

Amongst the most numerous and important wild animals of the Regency may be cited the panther, which has, however, almost disappeared, and which is now hardly ever encountered except in Kroumirie, Hyenas are less rare, and jackals are abundant. Wild boars swarm, especially in Kroumirie, and their destruction has become necessary because of the injury they do to the crops. Game is very abundant—hares, red partridge, quails, pigeons and ring, doves.



FIG. 10. — Oasis.

Photo ARNAUD

Tunis possesses 1,300 kilomètres of coasts washed by the sea— which here is very full of fish, but the results of the fisheries, up to the present, have not been sufficient for local consumption. The latest statistics show a considerable increase in the imports of fish, and an equally considerable decrease in the exports, due to the decreased output of the fisheries as regards tunny fish and botargo. Between the Cape Roux and the Cape Negro are found the Conger eel, shellfish, sar, whiting, red gurnet, all of which are very plentiful, also lobsters and crayfish. Anchovies and sardines form a very important fishing industry in the districts of Tabarka.



Soles and swordfish are plentiful in the Gulfs of Tunis and Bizerta. The fishing industry in octopus, or devil-fish, is particularly active. During the last few years 300 tons per annum of these animals have been drawn from the sea.

At present sponges are the most important feature of the fishing industry. In 1910 the importation of sponges was 24,259 kilog. (value 481,040 frs.), but fell in 1911 to 15,164 kilog. (value 335,499 frs.), and to 11,689 kilog. (value 194,952 frs.) in 1912. This diminution applies principally to the sponges which were imported from the Tripoli and Metropole markets. On the other hand, the exports of raw and washed sponges has grown to the value of 3,367,742 francs in 1912, as against 2,709,401 francs in 1911. The countries to which these sponges principally sent are France, Algeria and Italy.

Domestic animals are plentiful in Tunis, certain parts of the country being particularly adapted to breeding. The north is very favourable for the breeding of cattle, the centre and the south for poultry and eggs. The districts in which the breeding of horned cattle is carried on are chiefly Beja and Mateur. In these regions oxen of the breed of the Guelma flourish, also a breed known under the name of Mateur, the result of a cross between the breeds of the Guelma and the Pantellaria. The local breeds present certain defects, viz., inferiority in height and weight, incapacity for fattening, backwardness, quantity and quality of flesh poor. They are also poor milk-givers. On the other hand, the Tunisian cattle possess first-class qualities, viz., perfection of form, capacity for work, abstemiousness, rusticity and endurance.

The breeding of cattle will, no doubt, develop, but it will have certain difficulties to contend with in regard to climate and disease. The winter is sometimes very rough, the summer very hot, and then there is a failure of green pasture and water which is severely felt. They also suffer from some very dangerous cattle diseases, especially imported cattle; for instance, bovine pyroplasmose, or jaundice. It has been proposed to improve the conditions of breeding by selecting native beasts and cross them with those of European race; or to acclimatise foreign breeds. Of these methods, the cross-breeding appears at present to offer the best chances of success. Good results should be obtained by crossing with the Charolais breed.

The imports and exports of horned cattle have increased in Tunis. In 1912, 25,688 head were exported (value 5,102,755 frs.), against 8,144 head (value 1,154,085 frs.) in 1911. Tripoli took 10,112 head out of these, but there was no demand from that quarter in 1911. The presence of the Italian troops in that country would account for the increase.

The Tunisian sheep is the " Barbarin " type with, large tails, which, although much appreciated by the native population, finds no market in Europe. It has, therefore, been thought necessary to introduce the Barbary sheep with small tails from Algeria, which yields a meat of better quality. The merino type is also to be found in Tunis, fairly recently imported, and lastly, in the south, one finds the sheep of the Sudan. Tunis exports from 40,000 to 100,000 sheep per annum. The Algerian breed is preferred on account of its rusticity. An adult individual sheep will give from 18 to 20 kilos. of meat. The fleece, of good quality, yields 2 k. 700 of wool from the ram and 1 k. 300 from the ewe.

The central part of Tunis is well adapted for the raising of sheep.

The type of horse found is the Barbary, which is remarkably temperate and enduring.

The donkey and the mule are of the greatest utility, especially the latter, as saddle beasts and beasts of burden.

The natives own huge troops of goats, which are a cross between the European race and the Asiatic, long-tailed, race. In the towns there are Maltese goats, which are excellent milk-givers. In the south the goat of Tozeur and Souf also give a quantity of milk. In this district goat's-milk cheese is manufactured. This breeding seems to be growing less, as in 1911 there were only 470,000 head, as against 600,000 in 1901. In 1911, 6,045 head were exported value 55,704 francs.

The pig is chiefly raised in Khroumirie.

The nomadic, or one-hump, camel is abundant. It is used, not only for transport purposes, but also in tilling the soil and in work on the various water-wells. The recent military expeditions in Tripoli have brought about a notable increase in the export of these animals.

Finally, poultry-rearing, especially of geese, ducks and guinea-fowl, is carried on very successfully.

We may remark, in conclusion, that the rearing of domestic animals does not seem to have attained the development of which it is susceptible, but the local agricultural societies seem to have decided to take steps to study the question, and adopt means of improving the prosperity of this important branch of agriculture.

## VEGETABLE PRODUCTS.

From an agricultural point of view Tunis presents very varied districts, each yielding its characteristic products. Nearly all over Tunis the question of water supply plays the chief role. In the north, where the processes of re-forestation are carried on, the

water is kept up in the mountains for fertilisation purposes, and is kept from falling abruptly down to the plains again through the ravines which they have formed. In the olive-bearing regions artificial irrigation permits the constant extension of the woods and the restoration of their past splendour.

Finally, the establishment and maintenance of the oases is based on the utilisation of water, and on the fight against the encroachment of the sand.

Cereals constitute the most important agricultural product after olive-oil. At present there are 1,170,000 hectares of land planted with cereals, giving in the good years seven million of hectolitres of grain. Wheat occupies 600,000 hectares, barley a little less. Oats are cultivated by the Europeans, and maize, sorghum and millet by the natives. The type of wheat cultivated is the "hard" wheat, and produces annually more than two millions of hectolitres. More than three millions of hectolitres of barley are produced.

Tunis is a general exporter of cereals, but the value of these exports varies according to the harvest obtained. For instance, in 1912, which was a bad year, the exports of cereals fell to 14,267,994 francs, whereas in 1911 the value was 45,564,156 francs.

The forage plants in present cultivation are lucerne grass, which grows well in the humid parts of the country, viz: the cereal-growing districts of the North and in the oases; yielding from 8 to 9 cuttings per annum. Maize, sorghum, millet and barley also serve for forage. Besides lucerne, fenugreek, sulla or sainfoin, vetch, trefoil, and white mustard are grown.

The wine is cultivated almost exclusively in the northern part of the Sahel, in the Tunis and Grombalia controls, to the extent of more than 25,000 hectares. Table wines are produced, including muscatel. The average production is 350,000 hectolitres, of which only 250,000 hectolitres is for home consumption. In 1911 Tunis exported 152,603 hectolitres of wine in barrels (value 3,357,266 francs) and in 1902, 2,016,211 hectolitres (value 4,522,475 francs). France is the chief purchaser of these wines, then Algeria and Tripoli.

Recently grapes, both dry and fresh, have been exported.

Tunis, like Algeria, possesses a country showing properties specially suitable for the cultivation of fruits and vegetables. Apricot and almond trees grow remarkably well in the North, where also are cultivated the Japanese medlar, plums, apples and peaches. The Agrumes, of which there are said to be 40,000 trees, are found either in the neighbourhood of Tunis, or in the oases, where they grow under the shade of the palm trees. Figs are cultivated principally in the district of Gassa. Vegetables and the early growths of same, such as melons, water-melons, potatoes, beans, kidney beans,





Georges Huré.

Photo GUILLOT, Tunisie.

FIG. 41. — Agricultural Map of Tunis.

are cultivated in the gardens of the Europeans and the natives.

The olive grows in all parts of the Sahel. There are to day more than 360,000 hectares of land planted with olive trees, representing 41,500,000 trees, of which 8 millions are in full bearing. The districts where the finest olive trees are found are those of Sfax and the Island of Djerba. Tunis possesses 200 factories for the extraction of the oil, producing upwards of 20,000 tons of oil, which may be valued at 15 million of francs. The quantity exported varies with the state of the harvest. In 1910 the exports were 10,073,327 kilos., value 15,109,990 francs ; in 1911, 2,170,183 kilos., value 3,255,274 francs ; in 1912. 12,409,486 kilos., value 18,614,229 francs. France, and then Italy, are the principal consumers.

The date-palm constitutes the principal source of wealth of Southern Tunis. The Tunisian oases may be divided into four groups ; the Djerid : Tozeur, El Oudiane, Nefta ; the Nefzaoua ; Kebili ; Fetnassa, Gafsa and Gabes. There are in Tunis 1,350,000 date palms, of different species, of which the most celebrated is the deglet noor, or degla. In 1911, 903,082 kilos. of dates of the degla variety were exported, value 587,003 francs ; and in 1912, 741,083 kilos., value 481,704 francs. In the same years the export of dates other than the degla, sent exclusively to Algeria, was 1,124,176 kilos., value 281,044 francs and 3,590,038 kilos., value 897,509 francs respectively. The cultivation of the date has been pushed by the natives to a degree of perfection which is met with nowhere else.

Besides the edible plants we have mentioned. Tunis produces other commercial plants, amongst which alfa is undoubtedly the most important. This plant, which grows wild, is found in several parts, of which the principal extends from Thala to Gafsa, along the Algerian frontier. Alfa is also found in the district of Gabes and towards the frontier of Tripoli. *Diss.* (*Ampelodesmos tenax L.*) is also the object of extensive exploitation. Of these two plants the exports in 1911 were 507,971 quintals, value 4,063,768 francs, and in 1912, 525,143 quintals, value 4,201,144 francs. These exports are all sent to England.

The cultivation of tobacco has been commenced in the district of Gabes.

The cultivation of cotton has also been taken up, without irrigation, and with but little success.

Amongst the agricultural products of secondary interest we may mention the caroub-trees, which grow everywhere, but is not cultivated.

The Indian fig-trees, very much sought after by the natives for their fruit, constitute an important food for animals, especially in the years of scarcity.



## FORESTS.

The forests occupy at most 680,000 hectares, and are found exclusively in Khroumirie, to the north of the Medjerda. They are mostly made up of groups, not by any means dense, of oaks and cork trees. |

Cork-trees are the object of very active cultivation. In 1908, 30,000 quintals of cork were gathered, value about 800,00 francs.

The natives manufacture silks, woollen and cotton cloths.

Kairouan carpets and the blankets manufactured by the inland tribes, the burnous and haiks worn in the Djerba island and in the Djerid, are renowned.

The same is true with the potteries of Nabeul.

Saddlery, king, dyeing, espartero articles, soapmaking, distillation of essences are also in numerous centres encouraging the activity of the natives.

## EUROPEAN INDUSTRIES.

The European industry and chiefly the industry has already taken a notable extension in Tunis.

## OIL MILLS.

Numerous Oil-mills provided with the most perfect processes of extraction have been created at Sousse, in the Sahel, at Sfax, and in the Northern districts (Tunis, Bizerte, Tebourba, Cap-Bon, etc.), working the grignons the use of which the natives are ignorant.

## FLOUR MILLS.

The reform bill of July 19th. 1904, which established the customs-union in matters concerning cereales has created, notably in Tunis and Bizerte an important industry of flour-mills.

## MINES AND QUARRIES.

The extraction of minerals is by far the most important industry. Forty six concessions were granted for the working of lead, zinc

and iron ores. In 1912 they produced 573,000 tons of ores, with a value of 19 millions of francs.

The working of phosphates of lime is still larger and is very rapidly progressing. It amounted in 1912 to 1,900,000 tons with a value of 48 millions of francs.

To sum-up, the exports of ores and phosphates from the Regency amounted to 67 millions of francs.

Works for the transformation of phosphates have been installed recently in the suburbs of Tunis.

The working of stones quarries, furnished about 800,000 tons representing a value of nearly 5 millions of francs.

Salt-works are numerous, some are worked by the Government that has the monopoly of the sale of salt, the others have been conceded on the express condition that all the salt extracted will be exported.

### **MINERAL WATERS.**

Hot-spring waters are not uncommon in Tunis; the better known are those of Hammam-Lif (chlorate of soda waters,) utilised for the external treatment of scrofulous, nervous and rheumatismal diseases) and of Korbous (chlorate of soda and sulphurous, also calcium waters, for the external and internal treatment of the scrofulous, rheumatisms, syphilis, and paralysis). Are also to be noted Hammam-Zeriba, Hammam-Sguedidi, El-Hamma of Gabès, El-Hamma of the Djerid, Nefta, Sbeitla.

A French Company has created at Korbous a large thermal establishment.

### **FISHERIES.**

The coast of Tunis which extends on no less than 1390 kilometres, is bordered by shoals, where fishes of all kinds are plentiful. The richness of the marine fauna is extremely large, as the fishermen are generally furnished with the most primitive equipment, the shoals of 40 metres and above have never been exploited.

There are found in abundance the tunny, sea eel, denticulated, rock-red-mullet, etc., etc. Certain crustaceans such as, rock-lobsters and shrimps are also met with in great quantities.

Fishing for anchovies and sardines, which yields in some years more than a million of francs is carried on from March to August off the coast of Tabarka.

Sardines are caught equally at Malidia.

Should be also mentioned the sponge and cuttle-fish practiced off



FIG. 12. — Mineral Map of Tunis.



the coast of Sfax and giving occupation to many thousands of seamen.

## COMMERCE.

### COMMERCIAL STATISTIC.

At the beginning of the French occupation the total trade of the Regency (joint import and export) did not exceed 23 millions of francs ; from 1881 to 1889 it rose to an average of 54 and half millions of francs ; in 1898 it exceeded 97 millions, and reached, in 1902, 117 millions ; in 1903, 155 millions ; in 1904, over 160 millions ; in 1907, 206 millions ; in 1912 over 310 millions, and attained in 1913 the figure of 322,918,283 francs. In this total the imports from the United States of America amounted to 7,117,039 francs and the exports to the U. S. were 278,755 francs. These figures show an increase over the year 1912 of 524,347 francs and 251,755 francs respectively.

The exports to France have increased in an extraordinary way since the enactment of the Customs' Law of 1890.

Under the provisions of this beneficial law the share of France in the Tunisian exports that was only 13 0/0 in 1885-1886, has reached to-day an average of 60 0/0 including the exports to Algiers.

The merchandise, which at the present time take the lead among the exports from Tunis, are : natural phosphates, cereales, lead, zinc and iron ores, olive oil, fishing products (poulps, tunnies and boutargues, fresh fish, also dried, salted and preserved) wines, cattles, sponges, skins, raw wools, alfa, woven-work and dates.

With the exception of alfa, zinc ore and phosphates ; nearly the total of these products are shipped to France.

The imports which are received in Tunis come principally from France : machinery of all sorts, cast and wrought iron of all kinds. building materials, flour and semolina, dressed skins, leather goods, colonial provisions, silks and woolen cloths.

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## IV. FRENCH SETTLEMENTS IN TROPICAL AFRICA.

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### A. — French Occidental Africa.

#### 1. GEOGRAPHICAL SITUATION.

FRENCH Occidental Africa is the union under one general Government of all the Colonies which France possesses on the West Coast of Africa, between the Rio de Oro on the North and the English Colony of Nigeria on the South. These may be enumerated as follows :— Senegal and its dependencies\* (chief town Saint Louis); the territory of Mauretania; the Upper-Senegal-Niger (chief station Koulouba, near Bamako); the territory of the Niger (chief town Zinder); French Guinea, situated between Portuguese Guinea and Sierra Leone (chief station Conakry); the Ivory Coast, between Liberia and the Gold Coast (chief station Bingerville); Dahomey, between the Togo and Nigeria (chief station Porto-Novo).

Although these territories are separated, as regards their coast line, by the Colonies mentioned above belonging to other countries, they are all connected in the hinterland by a common base around the mouths of the Niger. On the North the French possessions are bounded by Morocco and Algeria, on the West by Lake Tchad, here touching French Equatorial Africa.

The Colony contains 3,154,854 square kilometres, and has about twelve million inhabitants, of whom five millions, are Mussulmen

\* The region of the Casamance is by the side of the English territory of Gambia. South of the Casamance is Portuguese Guinea. The Senegal, therefore, is separated from French Guinea by the region of Gambia and again by Portuguese Guinea.



and nearly seven millions fetish worshippers, who may be thus divided :—

	Area. sq. kilos.	Inhabi- tants.	Do. per sq kilo.
Senegal .. ..	196,720	1,250,000	6,35
Guinea .. ..	277,000	1,738,000	6,27
Ivory Coast .. ..	315,250	1,217,000	3,86
Dahomey .. ..	106,880	899,000	8,30
Upper Senegal Niger (to S. of 17th parallel)	816,394	4,955,000	6,07
Territory of the Niger ..	1,186,260	1,081,630	0,91
Mauretania .. ..	257,360	225,150	0.81
(exclusive of the Adrar)			
	<hr/>	<hr/>	<hr/>
	3,154,854	11,365,780	4,66

If the figures given for the superficial area are pretty exact, one cannot say as much as regards those given for the population. In this case the figures given are the minimum, representing only the population taken by the census for fiscal purposes, but it is certain that the number of the actual aboriginal population of French Occidental West Africa is very much higher. At the same time, it is only just to remark that the low percentage of population to the square kilometre for the whole of French Occidental Africa, viz., 4.66, is due, to a great extent, to the sparse peopling of the sandy regions of Mauretania and the Niger. If these parts of the Colony are excepted, the density of the population is 6.17 per square kilometre. The administration does all in its power to encourage the increase of its human capital. The fund devoted to gratuitous medical treatment of the natives was 370,000 francs in 1895, and had risen to 2,250,000 in 1913, and the construction of hospitals and dispensaries for the provision of medical attendance, vaccination, etc., increases year by year, in the same proportion as the number of civil doctors (now 49) and military ditto (50) attached to the native medical service and public hygiene\*. The General Government are anxious to provide each circle\*\* with a doctor entirely apart from the medical staff engaged in the bacteriological and

\* The special funds were provided by a loan of 400 million francs for the provision of medical attendance for the natives: of which three millions were devoted to the building of a large native hospital at Dakar; five medical stations in the Senegal, two in Mauretania, two on the Ivory Coast, three in Dahomey, a hospital at Bamako, a dispensary at Kita, a bacteriological and vaccine laboratory at Bamako. The funds used in ordinary practice in 1914 amounted to nearly three million of francs.

\*\* An administrative circumscription.

vaccine laboratories. In 1912 840,000 vaccinations took place, and 1,800,000 visits were paid in the whole of French Occidental Africa.

### ADMINISTRATION.

The various colonies of French Occidental Africa are grouped under one General Government, the seat of which is at Dakar. At the head is the Governor-General, who represents the Republic

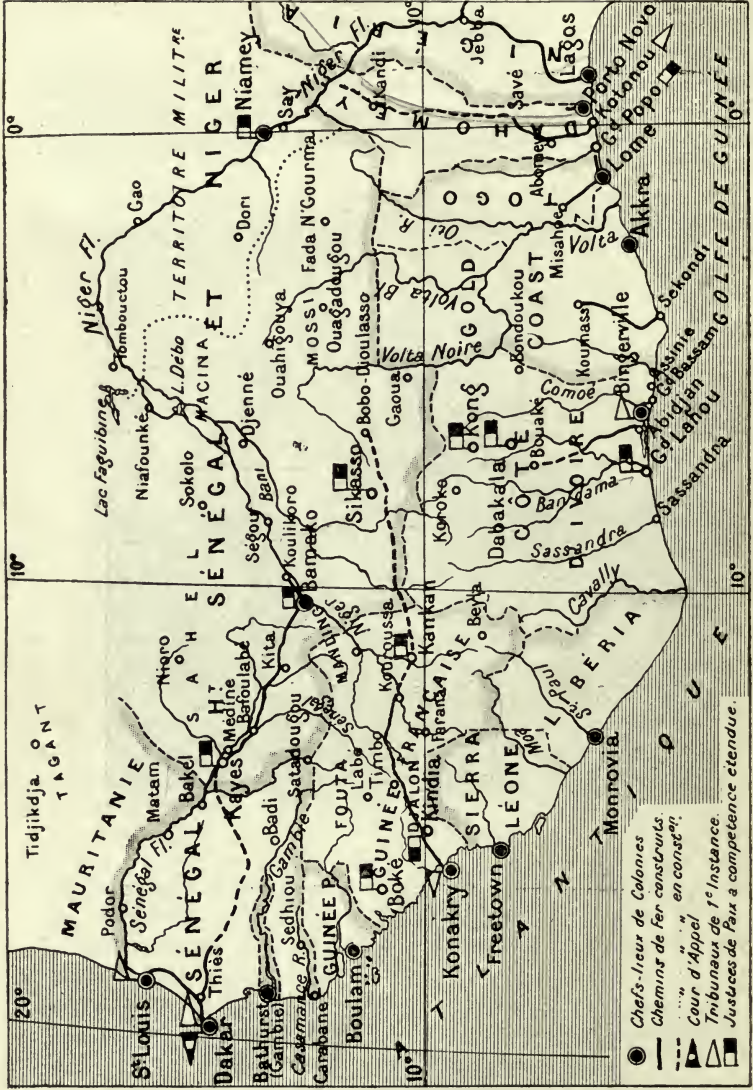


FIG. 13. — Djenné.

of France, and who alone corresponds with the Government, He is assisted by a Governing Council, as a consulting body, whose advice is necessary in questions of finance and public works of general interest. This Council is composed of a permanent commission, not only of Government functionaries, but also of commercial representatives : Members of the Administrative Councils of each group of Colonies and of the elected bodies (the Council-General of Senegal being the Upper Council of the Colonies).

Each colony is administered, under the orders of the Governor-General, by a Lieutenant-Governor, assisted by an administrative council of consultation, comprised of the heads of the colonial

departments and of outside members nominated by the Governor-General. This Council gives advice on financial matters and also



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Fig. 14. — Map of French West Africa.

regarding public works. In each "radius" or "circle" the Lieutenant-Governor is represented by an administrator.



The Colonies forming the Government General of French Occidental Africa each administer their own budget, which, however, is a dependant part of the General Budget. These local funds are devoted to the special needs of each colony : administration expenses, police, postal and telegraph service, registrations, etc. The funds are furnished from direct levies from the territory itself, of which the principal source is the native capitation tax. and also by indirect receipts not provided for by the general budget of the territory or the budget of the General Government. This general budget, created in 1904, is in addition to all local budgets in the colony. It is used to provide capital for the general government expenses, departmental services, such as public works, legal expenses, inspection of the colonies, customs, etc., and is furnished by a colonial debt of 346 millions of francs, of which 269,798,053



Photo FORTIER.

FIG. 13. — Dakar. Governor General's Residence.

francs is apportioned to the railways, 38,750,000 to the ports and harbours, 7 millions for the improvement of the river-ways, 10 millions for the improvement of the mouths of the Senegal and the works of the bar of same, 10,200,000 for sanitary measures and medical assistance on behalf on the natives 2 millions for the telegraph service, and 5 millions for military construction. Beyond the 346 millions of authorised expenditure the debt of Occidental Africa amounts to 204 millions.

In Occidental Africa the Government has the co-operation of the commercial element in all organisations affecting questions of internal economy, such as the Consulting Committees of the Rail-



ways and the Administrative Councils of the Colonies. The commercial interest also expresses itself in the different Chambers of Commerce—Senegal. Dakar, Rufisque, St. Louis, Ziguinchor (Haut-Senegal-Niger), Kayes, Bamako (Guinea), Konakry, Kankan (Ivory Coast), Grand Bassam (Dahomey), Porto-Novo. These Chambers of Commerce may, and do, admit members of foreign nationalities.

A bank with special circulating privileges has been established in Occidental Africa, called the Bank of Occidental Africa, with head offices in Paris, and agencies and branches at Saint Louis Rufisque, Konakry, Bingerville, Porto-Novo, etc. This bank is privileged to issue its own bank-notes, but the monopoly is no obstacle to the installation of private banks.

## ROADS AND MEANS OF COMMUNICATION.

French Occidental Africa only possesses three ports : Dakar a large modern and well constructed port, where unloading is easy ; Rufisque ; and Konakry, Grand Bassam and Cotonou are only open roadsteads supplied with wharves. A large interior lake port, however, is being constructed inland behind Grand Bassam.

As regards steamship lines, Occidental Africa is linked up with Europe by numerous lines. After touching at Dakar some boats shape their course for South America ; those of other lines continue down the West Coast of Africa. The Sénégal, therefore, is very much better served in this respect than the colonies of the south. The following lines put into the port of Dakar, in the Senegal :—

French—The “ Sud Atlantique ” line (from Bordeaux).  
The “ Transports Maritimes ” (from Marseilles).  
The “ Chargeurs Réunis ” (from Bordeaux).

Foreign — Cie Navigation Générale Italienne.

La Veloce.

Italian Lloyd (coming from Barcelona).

Compagnie Maritime (Belgian Congo), coming from  
la Pallice.

Besides these, there are numerous merchant lines, Ph. Delmas, Maurel et Prom, Cyprien Fabre, and Fraissinet serving the principal ports of Senegal. French Guinea and the Ivory Coast are regularly

visited by the French line " Chargeurs Reunis " and the foreign lines, Compagnie Maritime Belge ; the Woermann Co. (coming from Boulogne), and the Elder-Dempster line, coming from Liverpool. The " Chargeurs Reunis " and the Woermann Company touch regularly at Dahomey. In Guinea, the Ivory Coast and Dahomey numerous French and foreign trading boats also touch.

## POSTAL AND TELEGRAPHIC COMMUNICATION.

The postal service with Europe is assured by the rapid steamship service above mentioned. Telegraphic communication is maintained by the French cable from Brest to Dakar, continuing from Dakar by French cable to Konakry, Grand Bassam, Cotonou, etc. Between



FIG. 46. — Khombol. Station.

Photo d'ANFREVILLE.

Konakry and Grand Bassam there is also a foreign cable. Wireless telegraphy is installed at Port Etienne (Mauretania), Dakar, Rufisque, Konakry, the French station of Monrovia, Tabore (Ivory Coast), Cotonou and Tombouctou (a very powerful station of great capacity). In the interior the postal service comprises 235 post offices, 200 of them being also postal parcel exchanges, and 115 dealing with money orders. There are about 22,000 kilometres of aerial telegraph lines in the interior. This system, which is added

to every year, ensures facilities by letter and telegram combination to the port of departure of the mail-boat, by letter up to Dakar, and thence by electric transmission by the French transatlantic cable.

### RAILWAYS.

Beyond the line from Dakar to St. Louis and a branch line to the Soudan, the West African railway system is a relatively recent enterprise. The construction of the various lines is proceeding according to a plan already laid down and in accordance with the nature of the country and the geographical position of the colonies of French Occidental Africa, which are separated from each other by foreign possessions on the coast, but which have a common interior from the Soudan to the Haut-Senegal and Niger. The end which had to be gained was to start from a suitable point on the coast and from there serve the interior of the country. It was therefore decided to link up these lines at the mouths of the Niger by a trans-Nigerian line which could have its junction at Ansongi or some other point of the French trans-African system (*i.e.*, the Soudan branch). That is the programme which has been followed out exactly ever since 1902. At the present moment the French West African system consists of the following lines :—

	Kilometres.
Dakar-St. Louis, linking up the two Senegal towns. . . .	264
Thiès Kayes (southern branch, Thiès to Kayes), with a branch between Guinguineo and Kaolak, 22 km.; and a north branch, Kayes-Ambiddi, doubling the River Senegal, 44 km. . . . .	346
Kayes-Niger line, linking the basin of the Niger and Senegal rivers . . . . .	555
Konakry-Kouroussa line, linking Konakry to the Niger. .	589
Kouroussa-Kankay line (continuation of the above to and from the Niger to Vianvan, etc.) . . . . .	79
Ivory Coast line, from Abidgan, through the interior forests to Bouaké . . . . .	346
Kotonou-Savè line, from the Dahomey Port through the interior to Savè. . . . .	262
Pahoa-Segborouè line, a branch of the above, towards the west . . . . .	32
Porto-Novo to Hollis country line, very favourable to the cultures and especially to the cotton industry . . .	82
Total of the above lines, with their branches . . .	<u>2,580</u>

The following lines, for which money has been voted, are already in construction :—

	Kilometres.
Thiès-Kayes line (finish of line from km. 340 to Ambidedi).	298
Bamako-Bougouni line (to meet the line at Ambidedi) . . .	160
Kanan-Beyla line, continuation of the Guinea line towards the south . . . . .	243
Ivory Coast, a line from Dunbroko to Daloa, traversing the Equatorial forest towards the Liberian frontier. . . .	233
(C) Bouakè-Kong line, continuation towards the north of the line from Abidjan . . . . .	210
(a) Dahomey line to Savè-Parakou-Ijougou, continuation of the Kotonou line towards Soudan. . . . .	300
(b) Grand Popo-Lokossa, from the extreme west of Dahomey, serving a country covered with palm trees outside the central line . . . . .	47
(c) Porto-Novo-Kotonou, continuation of the Porto-Novo line to Pobe-Sakete. . . . .	27
	1,548

When the above railways are finished, a complementary system is proposed, for which the funds are not yet voted, and which will include the following in the more or less near future :—

	Kilometres.
Tambakounda to Mamou . . . . .	480
Kankan (Niger to Bougoumi) . . . . .	245
Bougoumi to Ansongo, along the Niger . . . . .	1,200
Beyla, continuation from Kankan on the Guinea line . . .	340
Cocude-Boromo . . . . .	560
Waghadoogoa-Fadu . . . . .	160
Fada N'parma-Djougou . . . . .	400
Parakou-Niger . . . . .	310
	3,490

To conclude, the railway system of French Occidental Africa consists of 2,580 kilometres of line already laid down, 1,458 kilometres in course of construction, and 3,490 kilometres propose to be constructed.



## COMMERCE.

For many years, and especially in the last two decades, commerce has made constant progress in Occidental Africa. In this colony trade is only subject to two kinds of taxes; one being the tax on patents and licenses, which is, however, very moderate; the other on imported goods, freight and customs. The latter is only collected in Senegal and Guinea (Act 14th April, 1905, and following). On the Ivory Coast and in Dahomey, which colonies are included in the zone affected by the Franco-English Convention of June 14th, 1898, there is no differential tax for persons or goods (Article 9 of the Convention). In Senegal and Guinea all goods pay import duty, to which is added, for all goods other than French, a customs duty. In addition, imported goods in Guinea, after having entered another African continental port, are subject to an indirect importation tax. On the Ivory Coast and in Dahomey, all merchandise, of whatever origin, French products as well as foreign, pay an import duty. In all colonies there is a special regulation affecting the trade in alcohol, in arms, and ammunition. Alcohol is subject to a very high duty (300 francs per hectolitre of pure alcohol imported or excised), and arms and ammunition are the object of very strict regulations. There is only one export duty, and that is on rubber, this being 7 per cent. *ad valorem*. The valuation of the product follows the fluctuations of the market; it is not uniform, and varies according to the district in which it is produced. This system of taxation is very flexible, and permits of it being raised or lowered in accordance with the situation of the market, without affecting the rate of interest.

This fiscal and customs system of taxes on merchandise and products, being moderate in its application, has not restricted the brilliant upward flight of the economical situation of Occidental Africa, which improves year by year in accordance with the extension of the means of communication, as is evidenced by the following figures :—

Year.	Imports.	Exports.	Total.
	Frs.	Frs.	Frs.
1845 . .	11,605,737	10,792,717	22,398,454
1880 . .	20,400,000	25,400,000	45,800,000
1895 . .	46,882,773	31,994,583	78,777,356
1900 . .	69,061,638	60,802,704	129,864,344
1913 . .	52,508,497	126,227,109	278,735,606

These figures are the proof of an assured economic development, and there is no doubt they reflect the reality. The imports and exports balance within 10 per cent., because it must be taken into consideration that the value of the imports is calculated at the port of unloading, that is to say, it is augmented by the cost of transit, insurance and unloading ; whilst the value of the exports represents the commercial price of the products, and not the cost of production. It is worthy of notice that since the year 1900 the value of the native products has risen by more than 100 per cent. ; and in the period between 1900 and 1913, the mileage of the French



Photo d'ANFREVILLE.

FIG. 17. — Trade house during exportation of arachides.

West African railway system has risen from 500 kilometres (Dakar-St. Louis and the Kayes-Niger branch) to 2,580 kilometres. This increase cannot be denied ; in 1911 there was a decrease on 1910, the figures being 118 millions against 124 millions, but the recovery was quick, as the figures were 120 millions in 1912 and 126 millions in 1913. This is a very satisfactory result when one considers that French Occidental Africa, has had to undergo, the consequences of the world crisis in the rubber market. Occidental Africa, however, possesses varied resources, and far from its productions having diminished on this account, the facts show that they have maintained their position and have even improved on it. It would, of course, be strange if during any ordinary year, or period of successive years, the harvest should be bad or deficient

at one and the same time in Senegal and Dahomey, in the Ivory Coast and the Soudan. Compensations are established between the different colonies of the group, and progress is certain on the whole. That is an important point in the financial condition of the colony, because the natives do not buy European imported goods except in proportion to the advantage at which they have sold their harvest. So that the credit of the colony (involving the continuation of the



FIG. 18. — Transport of the rice on the Niger.

work of economic tillage, railways, bridges, etc.) remains intact as though the products, the importation duties and customs, etc., had not moved. This is what has happened up to the present in the colony, and it is what will continue to happen.

One of the richest districts of the colony is the Upper Senegal and the Middle Niger, both for vegetable products and cattle breeding, but for want of rapid means of communication, it imports only a small proportion of its products. The finishing of the Thies-Kayes Railway, which will bring the basin of the Middle Niger and its tributaries into direct communication with the outer world, will change the situation.

There are, therefore, encouraging prospects for French Occidental



Africa, of which the products are sufficiently varied to support the fluctuations of the rubber market, which will become only a secondary article of trade for this country.

The principal exports of French Occidental Africa are the following :—

Ground nuts, of which 308,845 tons were exported in 1913, produced almost exclusively in Senegal. The Haut Senegal and



Photo DESPLAGNES.

FIG. 19. — Cotton market Douentza.

Niger and Guinea began the cultivation and commerce of this grain some years ago. An experimental station for the improvement of the methods of cultivation and selection of the product has just been established in Senegal.

Rubber was responsible for an output of 3,669 tons in 1913. The latex is gathered exclusively from the *Landolphia* and *Clitandra* vines, and from the *Funtumia elastica*. It can only be exported in plaques or cakes of about 1 centimetre in thickness, or in very thin sheets of crepe (Act, September 15th, 1912). The natives have been induced to prepare it in this form without difficulty. The change in their method of collection was initiated by the creation



of schools formed of native overseers in the Soudan, French Guinea, and the Ivory Coast.

The products of the oil palm in the Ivory Coast and Dahomey account for steadily growing exports, viz., palm nuts, 38,740 tons ; palm oil, 14,202 tons. Whole territories of natural palm trees in Dahomey and the Ivory Coast, which have remained uncultivated until now, are in process of laying out.

Some other wild palms, the Doum palm (*Hyphaene*) and the Palmyra palm, are able to give interesting products, such as vegetable ivory.

The timber of the Ivory Coast, the forests of which measure 112,000 square kilometres, is exported more and more. This year only mahogany has been exported. The forests also contain species giving timber comparable to oak, walnut, lemon trees, maple and teak, the exportation of which, commencing in 1913, reached 44,651 tons.

The exports of gums remained stationary in 1913, *i.e.*, 3.125 tons. An increase is, however, to be expected.

The native plantations and stocks of coconut trees are extending, and in 1913 680 tons of copra were exported from Dahomey and the Ivory Coast.

Shea-butter is very plentiful in French West Africa ; about 2,000 tons were exported from the Upper Senegal-Niger, and some was exported also from Dahomey.

Kapok is beginning to take its place amongst the regular exports, 500 tons being sent from the Soudan in 1913. The cutting down of kapok and shea-butter trees is forbidden in all the districts of French Occidental Africa (Article, April 8th, 1914).

Dahomey exported 900 tons of maize.

There are other products besides those already mentioned which are capable, in the near future, of yielding a certain amount of business. In the department of cereals there is rice, of which the cultivation is increasing in Lower Guinea, and more particularly in the Middle Niger. Besides rice, there are native cultures such as mil mais and fonio. The arrival of the railway at Ambidedi permits the rice grown in the Soudan to be exported, at least to the west coast of Africa.

Amongst the textile plants, the cultivation of cotton of selected native varieties has passed out of the experimental stage. In Dahomey and the Soudan, production is steadily increasing. In certain parts of Senegal, irrigated cultivation is giving rise to hope. Sisal (agave) is quite acclimatised in the Soudan, and there are already two plantations there. The *Hibiscus cannabinus*, or *da*, is cultivated by the people living on the shores of the River Niger,

the fibre being utilised by them, and is attracting the attention of specialists.

In Dahomey, but more particularly on the Ivory Coast, the cocoa tree is capable of being developed into a considerable local trade, as on the Gold Coast.

The castor-oil plant is cultivated in the Soudan; and sesame in Guinea, whilst certain varieties of copal trees are cultivated in this colony.

It will be seen, therefore, that French Occidental Africa is not a country in which agriculture is neglected; on the contrary, its products are very varied. These productions are in the hands of the natives, who, seeing the possibility of reaping advantage from their cultivation, are devoting more care to them.

The population is growing, manual labour is becoming educated, local needs are increasing, commercial traffic is developing, and this position cannot but be maintained. The moral and material progress of the population of the country form the best guarantee of the growing economic prosperity of French Occidental Africa.

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## B. — French Equatorial Africa.

### GEOGRAPHICAL POSITION AND POPULATION.

French Equatorial Africa, formerly known as the French Congo, has a superficial area, according to the return made in 1911, of 1,734,228 kilometres. It lies between 5 deg. south lat. and 15 deg. north lat., the longitude being 20 deg. east. Consequently, it is remarkable for the diversity of its territories. From the luxurious vegetation of the equatorial forests on the coast of the Gaboon to the sandy deserts of the Kanem, the country presents the most varied aspects. Differentiated by their sub-soil, their physical features, their oreography, their climate, their flora and fauna, these various regions support a minimum population of about 10,000,000 inhabitants.

Physically, French Equatorial Africa is divisible into four distinct parts: 1, the mountainous zone of the coast; 2, the central African plateau; 3, the trans-equatorial Highland Congo; 4, the Basin of Lake Tchad. Immediately above the maritime heights there is a

zone or belt of walnut forests, bounded on the east by the N'Gounié, the Nyanga and the Mari. Then comes the belt of grassy plains at an altitude of 400 to 700 metres; followed by a belt of sandy prairies on the high plateau, at an elevation of 700-800 metres, exten-



Fig. 20. — Map of French Equatorial Africa.

ding as far as the dividing line formed by the waters of the Congo system.

The principal rivers are the Ogooué, the Kouilou, called the Mari in the upper part of its course; that part of the Congo which is in French territory, with its tributaries, the Duna, the Likouala, the Sangha, fed by the N'Goko, the Ibenga, the Lobaye, the Kouango and the Kotto; and the Chari, which has no outlet in the sea, but empties itself into Lake Tchad, after receiving on its right the





FIG. 21. — 1. Ancient House of Brazzaville.  
2. Native Huts in the Tchad region.  
3. House of the « Messageries Fluviales ».



waters of the Bahr Salamat and on the left those of the Bahr Sara and the Logune.

The native population is composed of sharply varying races, which may be brought under two headings :—

1. The forest tribes, savage, suspicious and cruel.
2. The bush tribes, less bloodthirsty and more sociable.

### CLIMATE.

\* In French Equatorial Africa, as in all countries of the intertropical zone, in proportion as one penetrates into the interior, the temperature freshens, and the air, saturated with moisture on the coast, becomes drier, the climate milder, the temperature lower, and the rains less frequent. The year is divided into dry and rainy seasons. Generally speaking, there are two great climatic divisions : the Gaboon-Congo and the Tchad.

The climate of the Gaboon-Congo is characterised by excessive and constant heat and humidity. There are two seasons, very sharply divided. The rainy season lasts from October to June ; the dry Season from July to September. The rainy season is also the hottest ; during the dry season the sky is always overcast and the temperature very low.

On the Tchad there are also two distinctive seasons, but the inverse of the Gaboon-Congo. The dry season commences in October and ends in June, whilst all the other months are rainy, the greatest rainfall occurring in July and August.

The climate is much more unhealthy in the neighbourhood of the coast than in the interior. Against this must be set the difficulty of re-victualling, the absence of comfort in the dwellings, and the scarcity of indigenous foodstuffs, etc., etc., in the interior. One has also to take into consideration the prevalence of thunderstorms and tornadoes, which have a great influence on the native temperament, creating as they do extreme electric tension in the atmosphere. On account of these conditions it is seldom possible for Europeans to spend more than 15 to 18 months in French Equatorial Africa.

### POLITICAL GEOGRAPHY.

Dating from the Act of January 15th, 1910, the possessions of the French Congo and its dependencies were constituted the General Government of French Equatorial Africa, having as its chief seat

Brazzaville, at the head of which is a Governor-General (Monsieur Martial Merlin), assisted by a Governing Council. The Government is composed of the colony of the Gaboon (chief town Libreville), the Middle Congo (chief town Brazzaville), the Tchad (chief town Bangui), Oubangui (chief town Chari), and lastly, the military district of the Tchad (chief town Fort Lamy). Each colony of the group has an autonomous administration, at the head of which is a colonial Governor, with the title of Lieutenant-Governor, assisted



FIG. 22. — Matadi.

by an Administrative Council. As regards the military district of the Tchad, this is placed under the command of a superior officer bearing the title of Commandant of the Military District of the Tchad, directly dependent on the Lieutenant-Governor of the Oubangui-Chari-Tchad.

### COMMUNICATION AND TRANSPORT.

Communication between France and Equatorial Africa is ensured by several French and foreign lines. The French line, "Chargeurs Reunis," runs from Havre every three weeks on Wednesday and

from Bordeaux on Saturday. It takes 21 days to get to Matadi, and the price of the voyage from Bordeaux to Matadi is, 1st Class, 1,140 francs; 2nd Class, 875 francs; 3rd Class, 500 francs.

Among foreign lines, the Compagnie Belge Maritime du Congo Belge has liners leaving Antwerp every three weeks. The journey by La Pallice boats to Matadi takes from 16 to 17 days, and costs 900 francs 1st Class and 660 francs 2nd Class.

The Woermann Line (German), despatches from Hamburg on the 7th of each month, taking 41 days on the journey. The fare to the French Congo is : 1st Class, 825 francs; 2nd Class, 618 francs; 3rd Class, 343 francs.

The English "African Steamship Co.," has steamers leaving Liverpool every fortnight, on the Saturday, the voyage costing : 1st Class, 825 francs; 2nd Class, 603.65 francs.

The quickest way of getting to Brazzaville, for a passenger arriving by one of the lines above mentioned is without doubt the railway running from Matadi to Leopoldville. The run covers about 399 kilometres, taking two days, with a halt of one night at Thysville, the fares being 200 francs 1st Class and 125 francs 2nd Class. Arrived at Kinchasso, the passenger for Brazzaville can cross the Stanley Pool by one of the steamers of the Messageries Fluviales du Congo, or one of several other companies.

Several companies have steamboat services on the navigable portions of the rivers leading into the interior of the colony, of which the principal are :—

The Chargeurs Reunis, which has two supplementary services on the coast of the Gaboon, one from Cape Lopez to N'Djole, and the other from Cape Lopez to Loango.

The Cie des Messageries Fluviales du Congo, running on the Congo and Oubangui to Zinga on the lower reaches, and to Bangui on the upper river. On the Sangha River to Ouesso on the lower river, and to Nola on the upper. On the Alima to Diele or Lekoto. On the N'Goko to N'Goila.

The Cie des Transports Generaux du Cong. Oubangui (dating from 1910), making the transit between Bangui and Molaze possible in a few days.

The Cie de l'Ouame-Nana, which has organised a series of transports on the Chari on the one hand, between Benoue and the Lagoon on the other hand; also assuring the transit of the troops on service in the Tchad district.

The Haut Ogooué Society, which navigates the Ogooué up to Francheville, the Ivindo as far as M'Vadi, and the Okano as far as M'Vadi, and the Okano as far as M'Zara, permitting the re-victualling of the troops on service in these regions.

As a mean of internal communication the road from Loango to



Brazzaville must be mentioned, that from Kouilou to Loadiuro, the road from Libreville to Brazzaville, the roads of the Upper Chari and the Sultanats, as well as the numerous paths followed by the native carriers.

### SOME OF THE PRODUCTS.

The mineral products of the colony, which are chiefly found in the basins of the Mari and the Djoué rivers, are copper, zinc and lead, of which the two first are specially important. For a very long



FIG. 23. — Ivory.

time the natives have been engaged in their extraction, and during the last few years a regular European trade has been carried on.

The exports of copper, ore after having been only 8 tons in 1910, reached the figure of 1,899 tons in 1911 and 1,977 tons in 1912.

French Equatorial Africa is rich in river and big game. Amongst the latter, elephants rank high on account of the value of their ivory. Ivory has been sought after from very early times, and reaches the high price of 16 to 31 francs the kilogramme, according to the size of the tusks. In the first years following the advent of Europeans in Central Africa, the exportation of this product,



which was the only thing of sufficient value to pay for the expenses of transport by caravan, and of which there were large stocks in the villages in the interior of the country, underwent a very sudden increase. French Equatorial Africa exported 210 tons in 1905. But when the old stocks were exhausted exportation could only be kept up by hunting the elephant. For some years exports have remained stationary between 130 and 150 tons, and it seems they will keep somewhere about this figure in the future, and will vary very little. Eight-tenths of the Ivory exported is sold in the market of Antwerp.

### VEGETABLE WEALTH.

French Equatorial Africa is the most favoured of all French colonies as regards its wealth of woods. Like the Ivory Coast, Guiana and Indo-China, it possesses a great choice of species suitable for various uses. The wooded regions, of the Gaboon especially are close to the sea, are easy of access by water, and cover vast spaces. The great equatorial forests extend practically parallel with the sea-coast, and sometimes even grow down to the beach, from the frontier of the German Cameroon on the North to that of the Belgian Congo on the South, a stretch of 700 kilometres. This wooded zone varies in width diminishing progressively as one nears the South, in such a way that it terminates in the Belgian Congo, but some distance from the coast of the Congo; in the French territory one may put the average transverse dimensions at 200 kilometres from east to west. The superficial area covered by dense forest, therefore, cannot be less than 140,000 square kilometres. For the purpose of limiting the undue cutting down of young trees, which, by impoverishing the forest of species, would lead to depreciation in the markets of Europe, the Administration in 1911 fixed a minimum girth for the output of logs of timber. Every log sawn from a trunk must measure at least 4,50 d. long and have a diameter of 0,60 (for Okoume wood), and 0,50 for other woods used for cabinet-work. These dimensions are reduced by half for the pieces taken from the tops of the trees, and for branches.

Gaboon woods at present commercially used may be divided into five categories: the mahogany species, semi-hard woods, hard woods, very fine woods and ebony, soft woods.

Amongst the woods of the mahogany species may be mentioned:—

Ordinary mahogany, with slightly marked veining, rendering it very easy to work. When this wood is cut it is as well, in order to



FIG. 24. — 1. Market at Bangui.  
2. An important market.

prevent the larvæ found in the bark from penetrating into the wood itself, to strip off the bark at once, and until the moment when it is to be floated down the stream the logs should be placed at some distance from the ground.

The "Okoume" resembles mahogany, but is distinguished from it by a coarser grain and by its paler whitish (male okoume) or rose-colour (female okoume) tint, and its inferior density. It is easy to work, but as to be cut with a very strong saw, so as to avoid the felting of the edge and the overheating of the blade. It lends itself well to turning and rolling. It is very much sought after, especially in Germany, for making cigar-boxes. It is sold at about 70 francs per ton wholesale. Out of 95,747 tons of wood exported from French Equatorial Africa in 1912, okoume alone accounts for 86,193 tons.

Voukow is a little softer wood.

Douka, which is suitable for making turned furniture, carved wood, and especially fixed motor-car bodies.

Todo, which is used entirely for furniture for dining-rooms, wardrobes, desks, etc.

The Eréré, which is much appreciated by German workmen.

Ekouka, etc.

In the category of semi hard woods may be classed :—

The Kambala, which may be used either varnished or polished with beeswax for cabinet-making.

The Gaboon walnut-wood, showing a distant resemblance to European walnut, and used for fine joiner's work, cabinet-work, marquetry, etc.

The Mandji, which on account of its resistance to rot and to varieties of temperature is particularly adaptable for making panelling, carved doors, inlaid flooring, etc.

The Bilinga, for modern art furniture of the best class.

The principal hard woods are :—

Coral wood, used for cabinet-making or fine coach-work.

The Moabi, used either varnished or polished for cabinet-making, but especially recommended for carvings or for anything requiring great solidity, such as luxurious coach-work, railway carriages, naval construction, etc.

The Mowingui, used for levers, pulleys, parts of coach-work which are subject to particular strain, spokes and hubs of carriages, etc.

The category of the finest woods includes :—

Ebony, of which the price reaches between 220 fr. and 350 fr. per ton.

Bubinga, or Gaboon rose-wood, used for making luxurious furniture, or for posing on commoner woods.





Fig. 25. — Cotton-plant with *Hevea* tree.



Zingana, often named Zebra wood, which is distinguished by its colour from nearly all other woods employed in cabinet work.

Violey ebony, or rosewood.

The soft woods have been neglected up to the present. Later on many species will be included in this category, but at present little commercial interest is shown in them. They include.

The Fromager, or silk-cotton-tree, used in Germany for cutting thin sheets which are mounted on one another, reversing the direction of the fibres.

The Gombo-gombo, the best parts of which are used as an imitation of cork, rather than as a wood; and also the tulip-tree of the Gaboon.

The following is a statement of the exports of wood, registered by the Customs authorities, between the years 1898 and 1913 :—  
1898, 2,886 tons; 1911, 102,240 tons; 1913, 150,688 tons (value : 8,319,239 fr.). The results obtained in so short a period are very remarkable, and allow one to hope for a steadily growing market for the future.

## RUBBER.

French Equatorial Africa produces rubber which is entirely of the wild varieties, plantations of rubber having not yet been considered in the colony.

This rubber is of varying botanic origin.

The plant rubber is extracted from the rhizomes of the *Landolphia heudelotti*, *L. owariensis*, *L. davii* and *L. thollonii*.

The Ireh rubber is obtained by bleeding the *Funtumia elastica*.

The plant rubbers have to be extracted from the rhizomes. The vines themselves are frequently destroyed by the bush fires, and contain little or no latex, compared with the rhizomes. This rubber, called "pounded rubber," is extracted by beating the rhizomes, and is of less value than that obtained by bleeding.

The following shows the increase in the value of rubber exports for the last fifteen years :—

1896	..	..	546 tons	..	..	value	2,016,334 fr.
1912	..	..	1,901 —	..	..	—	17,072,636 —

The whole is exported by the Companies holding concessions, who send three-quarters of the produce to Havre and one-quarter to Antwerp.

## PALM OIL, GUMS AND FIBRES.

The oil-bearing palm grows abundantly (*Elæis guineensis jacq*) in French Equatorial Africa. The natives sold the product prepared in a very rudimentary manner, but relinquished its cultivation for



FIG. 26. — Coffee Tree. of Congo four years old.

that of rubber, and later for that of the precious woods, in spite of the efforts made by the Administration to encourage the cultivation of oil palms. There are at present several very important installations for the preparation of palm oil by extraction locally from the pulp of the palm fruit.

The exportation of the oil and of coconuts from the colony is hindered for want of economical transport by water, by the paucity of the population in the neighbourhood of the groves of *Elaxis*

palms, and the scarcity of independent traders in those districts. Only 76 tons of palm oil were exported in 1912. It is true that 79 tons were exported in 1910, but this must be set against the 166 tons in 1896. A comparison of the export figures for the last fifteen years is a proof of the previous assertion that the natives now devote themselves to the cultivation of rubber and to felling forest timber. The slight decrease in 1912 is due to the exceptional dryness of the whole winter season, and this applies also to the yield of piassava, of coffee and of cocoa.

As regards coconuts, they exported 359 tons in 1912, against 208 tons in 1896.

French Equatorial Africa produces gum copal of various qualities, the botanic origin of which is at present not thoroughly understood. There are two species, the red and the white. They are used commercially in many ways.

It is supposed that the red variety is exuded from the wounds in the bark of the Copaiba Manape o Kinitze (*Copaifera mopane Kirk*), a tree which attains a great height in humid districts and marshes and which is encountered in the forests along the banks of the Congo. The resin which exudes from these trees is like red blood when it has just been collected.

The origin of the white copal is known, but the tree which produces it seems on the point of disappearing. The gum, too, which is collected from it seems of very ancient origin. As a matter of fact, in the inundated lands of the Upper Congo, secretions of gum have been formed at the foot of trees which, at times of flood, have been washed away by the Congo and carried down to the sea. In the banks of alluvial sand in the river are found numerous pieces of gum, the surfaces of which are worn away and discoloured, but which, when cleaned, still fetch 110 fr. to 125 fr. per kilo. in Europe.

The equatorial forests also produce other oleaginous plants, such as the Irvinguin-Gaborensis, from which is made "Sika butter," the arachide, the owala, etc.

The fibre called "piassava" is extracted from the nerves of the leaves of various palms of the "Raphis" species. They are used in common brushmaking. When the fibres are long enough they are used for the bristles of mechanical sweepers. Raphia is cultivated commercially in the Gaboon.

The output is subject to considerable variations. Only one ton was exported in 1896, rising to 210 tons in 1899. It fell to 49 tons in 1901; was 288 in 1902; then 20 tons in 1905, rising to 253 tons in 1908 and falling to 40 tons in 1912. This is due, as above mentioned in connection with palm nuts, to the dryness of the winter.

## CULTIVATED PRODUCTS.

The coffee plant exists in the wild state in many parts of French Equatorial Africa, notably in the islands of the Congo, the Sangha and the Oubangui. The local coffee is much appreciated by connoisseurs, but is unknown commercially, and is affected by the low price of Brazilian coffee. There are also at present several species of coffee acclimatised in French Equatorial Africa which have to be chosen for cultivation in accordance with the soil and situation of the plantation. There are several coffee plantations in the south of the Colony.

The climate and soil of the Gaboon, identical with those of the island of San Thomé, seem also most favourable to the cultivation of cocoa. For the last 20 years experiments have been carried out, and at present there are 54 European exploitations and several native ones. These represent a capital of not less than 50,000 francs each, and several reach 500,000 fr. It is expected that in 1914 the exports will reach 140 to 150 tons, as this is the period when the plantations laid down with so much care in 1912, should begin to produce.

The statistical figures for the last 20 years show :—

Year.	Imports.	Exports.	Totals.
1892 ..	3,160,945 fr. ..	2,498,637 fr. ..	5,659,582 fr.
1902 ..	5,819,609 — ..	6,663,455 — ..	14,483,064 —
1912 ..	19,987,455 — ..	20,925,218 — ..	48,922,673 —
1913 ..	21,181,763 — ..	36,487,988 — ..	57,669,751 —

From this it appears that the average for the ten years from 1892 to 1902 was 11,500,000 fr. and that that of 1902 to 1912 34,500,000 fr., from which it is easily gathered that the progress realised was 670 per cent. on the imports, 1,460 per cent. on the exports, with an average of 1,017 per cent.

In 1911 the trade of French Equatorial Africa exceeded in importance that of French Guinea, the Ivory Coast and Dahomey, and was just half that of the whole Belgian Congo, the superficial area of which is three-fold larger.



## C. — Madagascar.

### GENERAL AND GEOGRAPHICAL DETAILS.

THE island of Madagascar is situated between S. latitudes  $11^{\circ}57'$  and  $25^{\circ}38'$ , and between E. longitudes  $40^{\circ}55'$  and  $48^{\circ}7'$ , and is distant 10,000 kilometers from France and 400 km. from the coast of Africa, from which it is separated by the Mozambique Channel. Its greatest length from North to South is 1,580 kilometers and its greatest width 580 km. It has a superficial area of 580,000 square kilometers, about equal to the superficial area of France, Belgium and Holland together. The population consists of 3,000,000 inhabitants. The coast line is 5,000 kilometers.

The island contains three well-defined districts : the central plateau, the coast district of the East, washed by the Indian Ocean, and the district of the plains, sloping gently to the West and bounded by the Channel of Mozambique.

The average height of the central plateau is from 1,000 to 1,200 metres, and is bordered on the East by a chain of mountains, the highest point of which is 2,500 metres.

The coast is strewn with numerous islands, more particularly on the North-West coast. The two most important of these islands are Nossi Be\* (22 km. long by 15 km. across) and Ste Marie de Madagascar (53 km. long by 4 km. across).

The inhabitants appear to be of Asiatic origin. They are akin to some neighbouring races. The race of the Hovas, superior to the others, is at the same time more numerous.

### CLIMATE.

Madagascar is outside the torrid zone, but nearly all over the island the year is clearly divided into two seasons, the one hot and damp and the other cold and dry, which is the reverse of what is usually found in temperate climates. The southern part of the island, which is very dry, is almost a desert.

The region of the plateaux is together the coldest and the healthiest part of the island. The West coast is more healthy than

\* Pronounce Nossee Ba.



FIG. 27. — Map of Madagascar.

the East, but marsh-fever rages everywhere, more particularly on the coast, and hematuric intermittent fever is also very common. On the other hand, dysentery is very rare,

### POLITICAL GEOGRAPHY.

Madagascar was visited for the first time in 1506 by a Portuguese captain named Ruy Pereira. The first French colonisation occurred in 1638. The island was definitely conquered in 1895, during the reign of Ranavalona III. Since 1896 Madagascar has been a French Colony, and is administered by a Governor-General, assisted by a Council.

The principal towns are Tananarivo, which is situated in the middle of the island and is the seat of the Government; Tamatave, on the East coast; Majunga, on the west coast; Diego-Suarez, also a port on the northern part of the East coast. The following cities are also to be cited: on the East coast, from North to South, Vatomandry, Mananjary, and Fort-Dauphin; and on the West coast, Morondava and Tulear. Since the year 1912 the archipelago of the Grandes Comores has been attached, politically, to Madagascar and administered from there.

### MEANS OF COMMUNICATION.

Madagascar is in communication with Europe:—

First, by the Messageries Maritimes Company. There are two mails monthly between Marseilles—Reunion—Madagascar—Mauritius and back. In addition there are monthly postal services between the North-West coast and the Comores, the South-West coast and Lourenco Marques, the East coast, Tulear and Durban. The time occupied in the voyage from Marseilles to Madagascar is from 20 to 26 days.

Second, by the Hâvraise Péninsulaire Company, which have organised a monthly service from Hâvre, *via* Bordeaux and Marseilles, to Madagascar, Reunion and Mauritius.

Third, by various foreign steamship companies, which touch at the island more or less regularly, the most important of which is the Deutsche Ost-Afrika Line.

The interior of Madagascar possesses a single railway line, about 271 km. in length, running between Tananarivo and Tamatave. Another line, of about 160 km., is actually in course of construction



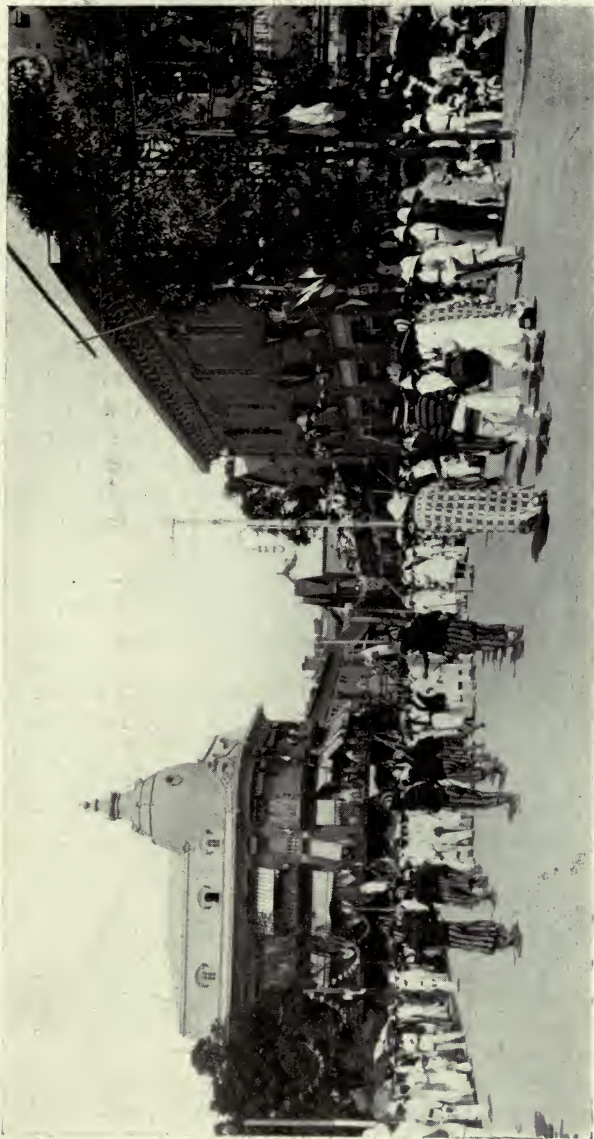


Fig. 28. — Tananarive. Group of Natives.

Photo *Dépêche Coloniale*.



between Tananarivo and Antsinabe. The island possesses a system of roads, served by the following motor vehicle services :—

Tananarivo to Fianarantsoa (South route).
—           Mananjary (     —     ).
—           Miarinarivo (     —     ).
—           Mevatanana (West route).

In addition a certain number of the rivers are being used and are undergoing improvements.

### MINERAL PRODUCTS.

Gold is found all over Madagascar, in the old or newer water courses, in the mountainous regions, and in veins formed for the most parts of auriferous quartz. The metal is obtained chiefly by washing in a " battée " , after the earth has been separated by means of a sluice. The quartz is crushed by hand. During the last few years the annual exportation of gold has risen to Fr. 8,000,000. Occasionally the gold is found in conjunction with a little platinum.

Precious stones are also to be found in the island—tourmalines, beryl, rubies, sapphires, garnets, chrysoprase, chalcedony, etc. The amount of the production of the stones found is about 300 kgr. per year.

Iron is plentiful, and exists in the form of rich strata, which contain neither sulphur nor phosphorus, but have manganese and titanium. It has been, however, little worked.

Copper, lead, zinc, manganese and nickel exist, but are not worked. On the other hand, graphite is regularly, worked, and is exported to the extent of 3,000 tons.

### ANIMAL PRODUCTS.

The most important wild fauna are those of the lemuridæ family, which are characteristic of this region, and the wild boars, which exist in great numbers.

Birds are plentiful, and there is a good deal of excellent game, viz., ducks, waterfowl, teal, quails, larks, etc., etc. Turtles and crocodiles are abundant. The rivers are full of fish. Domestic animals

\* A kind of wooden cone which can be filled at 2/3 of auriferous sand and which serves to wash out in the river the thinner sandy elements.

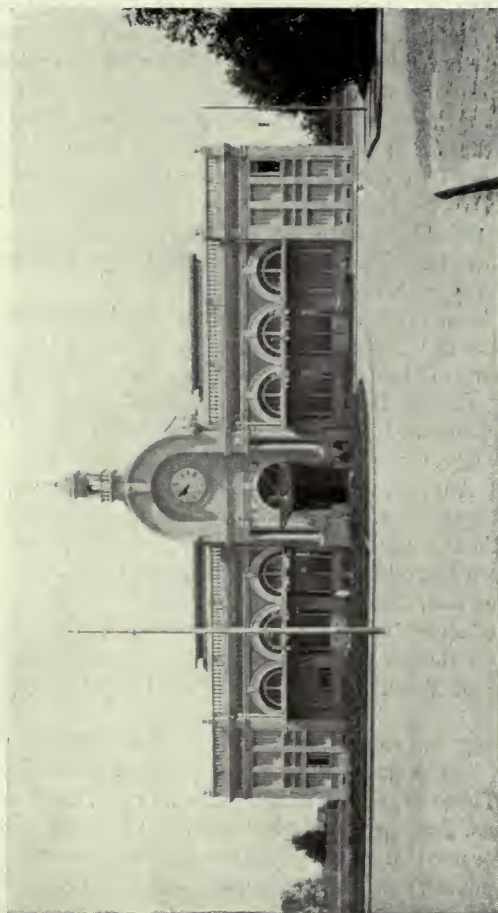


Photo *Dépeche Coloniale*.

Fig. 29. — Station of Tamatave.

are numerous, especially oxen, which are identical with the Indian zebu. These animals generally weigh from 300 to 350 kgr., and their height varies from 1 m. 20 to 1 m. 30 from the withers. They live in herds of 50 to 100 head, tended by a cowherd.

It is supposed there are about five million cattle in Madagascar. Some of them are deprived of their horns and are used as beasts of burden. They are also fattened for food, and they sometimes attain the weight of 600 kgr. In the interior of the island these cattle form an important article of commerce, and their raw hides are exported in large numbers. In 1911 the value of the hides so exported was 8,668,191 frs. As regards the beasts themselves, they are exported in the form of living cattle, or as chilled or preserved beef. In 1911 the value of such exports reached 1,130,851 francs. These are all sent to Marseilles, Reunion, the Comores, Central Africa and the Mozambique. The greater part of the exports is made up of living cattle.

Horses have been raised, especially since the time of the French colonisation. Instead of the 300 horses which existed on the island at the time of the French conquest, there are now 2,000. The following stocks have been introduced, *viz.*, Abyssinian, Australian, Barbary and Tarban among the stallions, and Tarban, Barbary, Normandy, Camarguaiee, Algerian, Argentine, Uruguayan, Australian and Abyssinian among the mares. These animals are seldom affected by illness. The Austrian stock has been acclimatised in the South-West of Madagascar.

Ostriches were introduced in 1902 at Tulear and, to-day, this station possesses over 200 birds.

The raising of sheep is very slightly developed. The South part of the island is particularly favourable. There are about 20,000 sheep in the province of Tulear. These are of the big-tailed type of Asia and Africa.

Pigs exist only on the central table-land of the island. Their development is due to the cultivation of the manioc, sweet potatoes and potatoes. These pigs are of the Asiatic type, and are black, with rough skins. They are easily fattened, and are excellent eating.

Chickens are raised in large quantities in Madagascar.

Silk worm breeding could be made most successful in Madagascar, the natives having proved themselves to be very clever in this industry.

## VEGETABLE PRODUCTS.

Almost the whole of Madagascar is favourable for agriculture. The plains of the central plateau, fertilised by the rains of the land





Fig. 30. — Cocoa-tree of Antilles introduced in Tamatave station. Photo *Dépêche Coloniale*.



season, called "hivernage", are suitable for the cultivation of cereals, and also for mulberries. The East and North-West coasts, which have a tropical climate, are good for growths which demand a rich, humid soil. The West coast, hot and dry, grows coconut trees and rubber plants.

Besides these, the natives cultivate, almost universally, rice, manioc and sweet potatoes. Rice is the principal culture of the natives. In the middle of the island the French have introduced fruit trees and cereals.

The culture of rice is developing largely. From 1900 to 1908 the island imported 800,000 frs. worth of rice. To-day it exports over than 1,000,000 frs. worth.

Manioc, which is easily cultivated in the greater part of the island, has developed as an article of export in the same way. In the last few years from 12,000 to 13,000 tons were exported, either raw or dried, to the value of 1,500,000 francs; in the year 1912, the output was raised to 23,000 tons, valued to 3,000,000 francs.

Sweet potatoes are largely cultivated by the natives. Maize, wheat, barley and oats are also cultivated with success, thanks to the irrigation in the central plateau. Also sugar-cane.

Cape peas (*Phaseolus lunatus*) are cultivated in the alluvial districts of the river deltas in the South-West. They are entirely exported to England and the English Colonies of Africa, and reach a value of 3,000,000 francs.

The growing of garden vegetables has very much developed in the outskirts of the towns, and especially round Tananarivo, which is kept abundantly supplied with fresh vegetables.

VANILLA is cultivated along the coast between Antalaba and Farafangana; also in Ste Marie and the Comores. It has, however, been specially developed to the North of Maroansetra and Nossi Be. The exports, which ten years ago were only 170,000 francs, are now upwards of 400 tons, reaching a value of 4,000,000 francs.

CLOVES are grown solely on the small island of Sainte-Marie and the coast of the mainland facing it. From 130 to 180 tons are exported annually, to the value of 250,000 to 350,000 francs.

COFFEE is grown on the coast and in the district of Nossi Be. Up to the present the two types cultivated are the Arabian and the Liberian. The first variety yields the best quality coffee. The Liberian is less esteemed because of its inferior product. Unfortunately these two plants suffer severely from the attacks of the *Hemileia vastatrix*. A species introduced during the last few years, the *Coffea congensis*, approaches in flavour the Arabian coffee, and successfully resists the attack of this fungus. The Colony only exports about 300 tons per annum. The plantations, however, are developing.



Photo *Depeche Coloniale*.

FIG. 31. — Coffee shrub two years old.

Cocoa has been imported into Madagascar by means of plants brought from Reunion, and is found in the coastal districts between Tamatave and Mananjary, which are favourable to its cultivation. The harvest only reaches about 20 tons, of the value of about 40,000 francs.

COPRA is to be drawn from the great plantations of coconut trees established on the coast, especially in the North-West, but has not yet reached the productive stage. The present state of the plantations, however, augurs very favourably for a good yield.

The production of the ESSENCE OF YLANG-YLANG has reached 300 kilog. in 1912. The introduction of the plant giving this perfume in Reunion, Nossy Be and Mayotte, has brought the price down from 4,500 francs par kilogramme formerly at Manilla, to 350 francs in the Metropolitan market at present.

## FORESTS.

Madagascar possesses 10,000,000 hectares of forest, being nearly 20 per cent. of the entire surface of the island. These forests form a continuous belt round the mountainous region of the island. Leaving the East coast, in the direction of the high table-land, the following is to be noted : -

1. The land by the sea is covered with *Cycas*, *Pandanus*, or vakoà, and other shrubs, which are not very valued from a commercial point of view. It is in this region that the coconut and filao flourish.

2. The smaller forests, which are much more fertile than the forests of the more elevated regions, commence at an altitude of 50 to 60 metres, and include growths of " nato ", of which the bark, used in painting, gives a cachou colour; the yellow tamarind the wood of which may be turned; the ebony tree, which attains large dimensions on the sea coast, but of which the diameter diminishes with cultivation; the " haramy ", which is used for boat-making; rosewood, mahogany, the violet ebony, and the " hintsy ".

3. On the edges of the smaller forests and in the basins which they form one finds the region of the raphia.

4. The region of the ravinala (*Ravenala Madagascariensis*), or travellers' trees, begins about 50 metres in altitude and extends to about 200 metres.

5. Starting at 200 metres high, one is in the great forest, which contains about the same species as the forest of the high table-lands; the hetatra, which is an excellent wood for wheel-making



and is also used for the handbarrows of filanjana; the ambora, of the family of sandalwood trees, the wood of which was reserved for making the coffins of the ancient kings of the Imerina; the lalona, a cabinet maker's wood; the merana, a white imputrescible wood, which makes good stilts; the angavodiana, a cabinet maker's wood, of a yellow colour enamelled with red; the varongy, used for parquet flooring and panelling; the hintsy, an excellent cabinet maker's wood; the hazondrano, a joiner's wood, easy to work; the voamboana or violet ebony; the zahana, a wood used in tanning; the rangy, veined black on yellow, and employed in marquetry. Besides the valuable species and the woods used in construction, the forest also contains rubber vines, colouring and medicinal plants.

6. Lastly, the sixth region, that of the high valleys of the Central Plateau, which contain the same species, less beautiful than those of the fifth belt, but with some additional varieties used in carpentering, joining, cabinet making, and wheel making.

In approaching the Central Plateau by way of the West coast, one notices the following:—

1. The region along the sea shore only bears *Pandanus*, *Cycas* and *vakoa*, like the East coast; these are replaced here by plantations of mangroves, which border all the estuaries and extend a good way into the interior. The mangroves include one or two varieties which are used by carpenters (the red mangrove), but it is chiefly on account of the amount of tannin they contain that these trees are of commercial value.

2. The second région, or belt, that of the cliffs, includes the fan palm, which is used by the natives for making cabins; the baobab, which has no constructional value on account of the spongy nature of the wood; the raphia; some ravalala on the heights; then a series of bushes, amongst which is the voavontaka, the mahabiba (mahogany nut), and the lacticiferous species, the tamarind and the voara.

3. The third belt commences at the first line of hills, and here one finds again the trees which grow on the East coast; the lalona, the hintsy, the merana, the varongy and the hazondrano. In addition to these there are the sohitsy, the voapaka (for joiners' work), the kindro, the tsimahely and the vakakomanga for carpenters' work, and the andrintsohihy for wheel-making.

4. The fourth region possesses only isolated groups of trees, found at the bottom of the valleys, and which represent the same species as are found in the sixth belt already mentioned. This belt extends to the edge of the Central Plateau.

The almost total absence of arborescent growths, in the centre of the island, is due to the nature of the soil and to the dryness of



the climate which prevails for six or seven months of the year. There are, however, several growths of trees on the flanks of the Ankaratra, as well as some forest groups between South Ambohimanga and Haka. More important wooded tracts are found on the borders of the betsileo district.

In the South there is not a single forest, but there is a vegetation peculiar to itself. In this country grow trees which are completely bare of leaves, such as the cactus, the coral trees, and the intisy (a *Euphorbia* which yields rubber latex).

In the East, the limits of vegetation are clearly defined, commencing at the foot of the Western slope of the Fort-Dauphin mountain.

In the West the coral tree is found in the neighbourhood of Morondava, while the intisy is not found till one reaches the Table mountain. This is because the moisture, and the rains on the West coast, diminish as one approaches the South.

The timber products of Madagascar may be divided into five classes :—

Woods used in cabinet-making.

„ „ marquetry and turning.

„ „ building.

„ „ wheel-making and carriage-building.

„ „ girders (or sleepers). (Road-building and railways).

**CABINET-MAKING WOODS.** — The species in this category are — ebony, violet ebony, rosewood, nato, hintsy, mango and ambora. There are four varieties of ebony : the ikirina, which gives ebony of the highest quality ; the hazomainty and varavina, giving the second quality ; the other species not being employed. Rosewood is found in the coast woods on the Bay of Antongil. The violet ebony, which reaches a height of 15 metres, with a girth of om. 50, is found in large number in the Madagascar forests.

Mahogany (rotramena) is also very plentiful.

**WOODS USED FOR MARQUETRY AND TURNING.** — 1. The anjananjana, sufficiently plentiful in the Eastern forests, having wood of a rose-white shade, very hard, fine-grained and with twisted fibres.

2. The manoka has a very dense and compact texture, and resembles French wood in colour.

3. The zahana, which is yellowish and very close-grained.

4. The harahara, extremely hard, shaded black and brown on a yellow ground.

**WOODS FOR BUILDING.** — There are numerous species, amongst which are the lalona, the hazomena, the makambo, the merana, the varongy, the volonborona, etc.

WOODS FOR WHEEL-MAKING. — The most notable varieties are the fotona, the gavoala, and the valaniranza, sufficiently common in the plantations of the East coast.



Photo *Dépêche Coloniale*.

FIG. 32. — *Funtumia elastica* six years old.

ROAD AND RAIL-BUILDING WOODS. — The most valuable species grow on the coast; the asy, the hintsina, the vahona and the merana; and, in the more elevated regions, the vivaona, the longotramena and the herehitsika.

The exportation of cabinet-making woods does not exceed a million tons a year, of an approximate value of 200,000 francs.

## ADDITIONAL PRODUCTS OF THE FORESTS.

**RUBBER.** — The Malgache variety of rubber is furnished by trees and vines. The trees are less numerous than the vines. The Southern part of the island produces the hintisy, and the forests of the West and East the mascarenhasia family (barabanja, guidroa and hazondrano). The numerous varieties of vines belong almost entirely to the *Landolphia* species. They produce two sorts of Malgache rubber, known as “Tamatave rose” or “pinkie”, and “Majunga superior”, sold on the market of the Colony, the former at 5 to 8 francs the kilo., and the latter at 3 to 5 francs the kilo.

The progress of the rubber exports, the value of which was only 550,000 francs in 1902, is shown by the increase in 1906 to 7,500,000 francs, and in 1910 to 9,000,000 francs. This result is due in part to the advance in the market price. The statistics for 1911 show an exportation of 800 tons, to the value of 4 500,000 francs. This reduction was due to the restrictive measures taken by the Government in order to educate the native to methodical production.

**MANGROVES.** — The bark of the mangrove is very rich in tannin, and forms the object of intensive cultivation. The densest and richest growths are found on the West coast, in the districts of Analalava, Majunga, Maintirano, Marondava and Tulear. In 1910 the exports reached 36,000 tons, value 2,700,000 francs, and in 1911 53,000 tons, valued at 3,600,000 francs.

**RAPIA.** — This is found on the Northern part of the coast of Madagascar in much greater abundance than on the East coast. Almost the whole of the raphia exported from the island is absorbed by the horticultural and agricultural industries in France. The annual value of the exports to-day is 3,400,000 francs.

Locally the natives are making hats, blinds and everything with the raphia. The fibres are segments of the young leaves of the *Raphia Ruffia* Mart Palm.

**COLOURING PRODUCTS.** — The bark of a large number of the trees of Madagascar possesses colouring matter. The most interesting of these is the bark of the sakoa (Cythere tree), which gives a light “cachou” tint of remarkable fixity.

**ANIMAL WAX (Beeswax).** — Among the forest products we must include the beeswax which is found in all the wooded districts of the island. About 500 tons are exported every year, the approximate value of which is 1,500,000 francs.



## D. — The Réunion.

In 1913, the trade of the colony amounted to a total figure of 41,527,233 francs, an increase of about 6 millions over the figures of the preceding years, but inferior on the whole to the transactions of ten years ago. In this total the export appear for 16,592,290 francs.

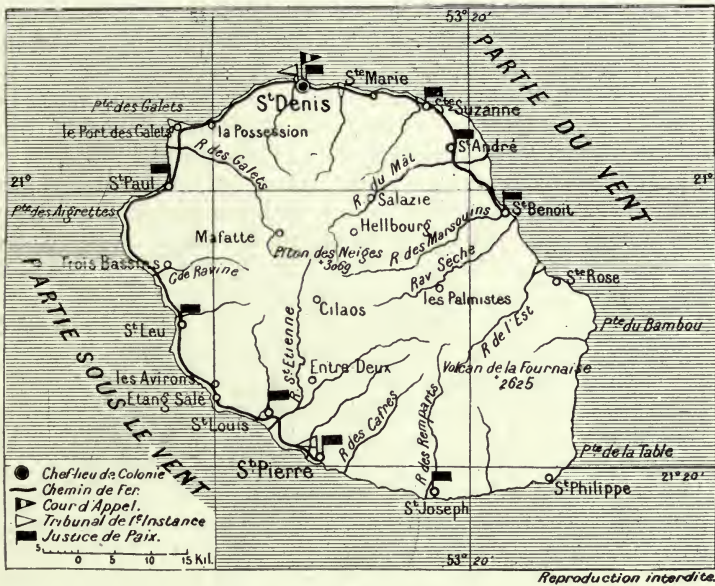


FIG. 33. — Map of Reunion.

The *Sugar Cane*, remains still the principal agricultural product and is cultivated in some places up to and at times above an altitude of 1,000 metres.

In 1913 were exported, almost entirely to France, 38,972 tons of sugar, with a value of 8,870,288 francs. To France also is exported *Rum*, viz : 3,694,824 litres estimated 1,128,162 francs.

After sugar cane, the cultivation of *Vanilla* takes second place in importance, and faces energetically the competition of the chemically produced vanilline. Here are the quantities exported in 1913 : 61.974 kilos, valued 1,749,822 francs.

Among the plants producing the essences, the *Geranium rosat*

(*Pelargonium capitatum*) has reached for several years a considerable cultural development and somewhat out of proportion with the requirements of the market.

The export of geranium essence has reached in 1913, 37,390 kilos, with a value of 1,851,652 francs.

The cultivation of *Ylang-Ylang* (*Cananga Odorata*) has extended equally, and the ylang essence exported shows the figure of 1,743 kilos with a value of 210,605 francs. The *Vetiver* essence comes in for 1,846 kilos valued 107,933 francs.

The *Manioc* is cultivated in its sweet varieties on the coast and also at low altitudes. *Tapioca* in lumps was exported to France, 2,167 tons in 1913 with a value of 640,940 francs. The manufactures of fecula contributed also to the trade 598 tons of fecula value 16,904 francs.

*Preserved fruits* appear in the statistics for 31 tons, estimated at 24,608 francs. The European vegetables and fruit-trees grow in high altitudes, where barley and oats can also be cultivated.

The Arabian *Coffee-Tree* formerly so largely cultivated and producing the well liked coffees known as “ native coffee ”, “ Leroy coffee ”, “ Bourbon pointu ”, has decreased largely on account of the attacks of the “ hémiléia ” and the substitution of the more robust “ liberia ” variety has not been sufficient to compensate for the deficiency. In 1913 the export was 8 tons, value 33,788 francs.

The *Clove-Tree* and the *Nutmeg-Tree* are more and more abandoned ; cloves after having reached 11 tons in 1904. the quantity exported in 1913 went down to 1,090 kilos valued 1,363 francs.

Among the textile fibre plants, the planters at Reunion give the preference to the cultivation of *Green-Aloe* (*Fourcroya Gigantea*), 111 tons of fibres, value 54,765 francs were exported in 1913. The *Chou-Chou straw* (*Sechium edule*) used for hat-making shows an export of 38 tons value 58,255 francs.

The duality of the climatic conditions in the western and eastern parts of the island, as well as the topographical relief which creates various zones of altitude permits the cultivation of a large variety of vegetables and industrial plants.

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## E. — The French Somalis Coast.

The torrid climate and relative scarcity of water prevent the development of any large agricultural exploitation.

Commerce consists almost entirely of goods in transit for the hinterland. Plantations of date-trees, coco-trees and cotton promise to give a good result, as well as some experiments made in the cultivation of tobacco and sorgo. Market gardening is practised in the Ambouti valley, at a few kilometres from Djibouti which provides a market.



## V. FRENCH SETTLEMENTS IN ASIA

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### A. — French Indochina.

French Indo-China is essentially agricultural. Its export trade, of a total of 346 millions francs, is supplied to the amount of 84 per cent, by the products of the soil, either as raw material or as partially manufactured.

The variety and abundance of the products of the soil, those in particular produced by agricultural labour, are due to the diversity in soil and climate conditions of a territory situated between 90 N. lat. and 22° N. lat. covering an area of 720,000 square kilometres and with altitudes rising to 2,000 metres in the amram chain of mountains, which form, as it were, the backbone of this vast tract of land crossed by an enormous network of rivers.

Cochinchina, Cambodja, Annam, Tongking and Laos (beside the enclosure of Kouang-Tcheow-Wan) form, from south to north, a series of territories, passing from the tropical to the sub-tropical zone—there in the deltas of large rivers, which compose the greater part of Cochinchina and Tongking, is the great centre of successful agricultural enterprise—outside the deltas and alluvial regions, bordering the great rivers and streams, where the cultivation of the soil is carried on, we find either more or less dense forest, or else the brushwood of the primitive forest, which covers wide areas, and provides also several wild crops which appear in the commercial exchanges, and represent considerable value. The exceptional mineral wealth of Tongking and the promising outlook for the same in Laos, makes Indo China a country of economic wealth and varied resources, with every right to look forward to a prosperous future.

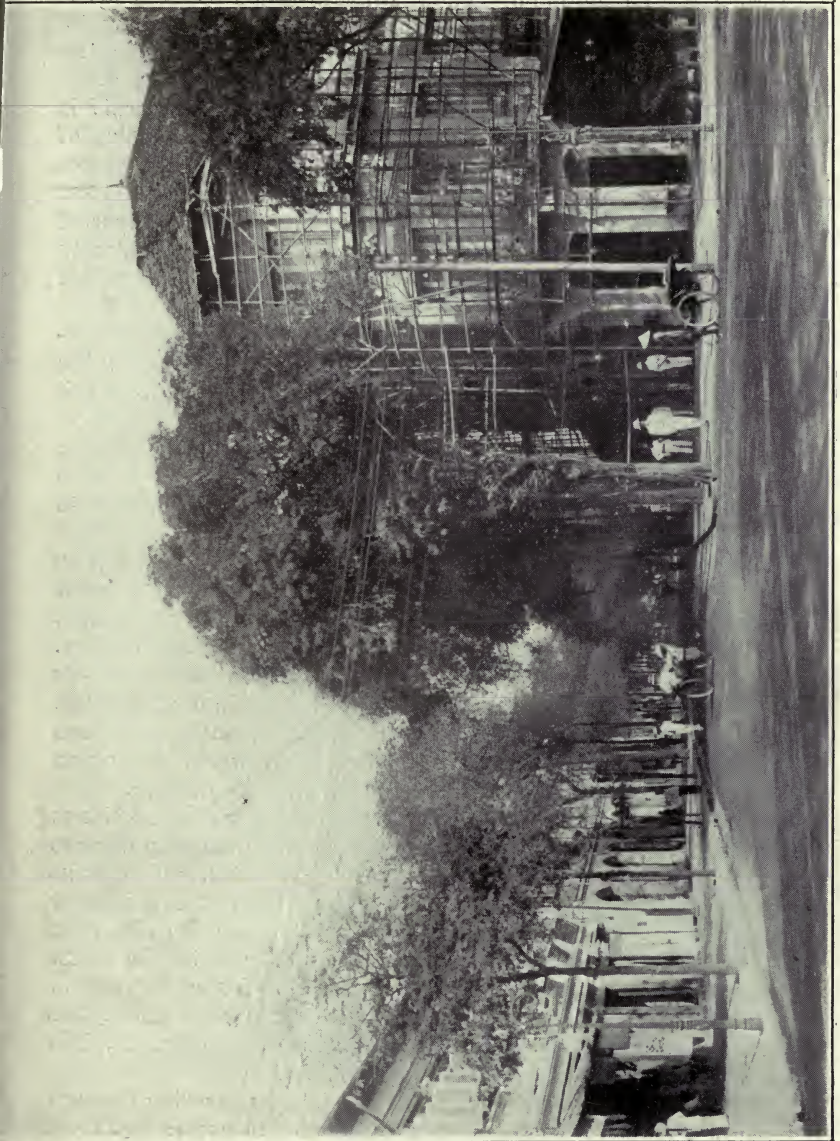


FIG. 34. — Street at Saigon.

Photo *Dépêche Coloniale*.

For the agricultural colonist, the centre of activity to-day is Cochinchina; for mining operations Tongking; and for cattle production Cambodia-Annam will, sooner or later, be the country for the agricultural colonist. It is also the country that offers the closest analogy with the favourable conditions existing in Java.

The chief product of French Indo-China, speaking, generally is rice. The size of the crop, assured as it is by the rice fields of Cochin China and Tongking, gives Indo-China the second place among rice exporting countries, Burma occupying the first place. During the period 1899-1908 the average annual amount exported by Cochin China alone was 820,000 tons (which produces annually 2 1/2 million tons), and the figure of 1 million tons for the whole of Indo-China has been exceeded already in certain years.

The rice of the plains (*Oryza Sativa L.*) exists in nearly 200 varieties, forming, for commercial purposes, three chief groups: the *Gocong*, the *Vinhloug* and the *Baixau*, according to the form and the size of the grain.

The ruling prices of Indo-China rice in the markets of Europe are lower than those of rice from Java and Burmah. One reason is found in the insufficient sorting before the "paddy" passes to the millstones of the rice plantations.

All the rice fields of Cochin China are at Cholon, which is an industrial sister town to Saigon, and most of them are in the hands of the Chinese mill-owners. The largest trade in rice is with China. The Cochin China rice fields produce, on an average, 2,000 kilogr. of "paddy" per hectare. The Cochin China delta has still hundreds of thousands of hectares that could be turned into rice fields. Progress may be anticipated when quality and quantity have been improved and increased as a result of research work, bearing on the selection of seeds, the uses of manures, and motoculture.

Numerous varieties belong to the group known as glutinous rices (*Oryza glutinosa L.*), which are used chiefly in the manufacture of the native brandy commonly called *choun choun*, which plays an important part in the food of the Annam natives. The interior tribes cultivate "mountain rice" (*Oryza Montana L.*) either on terraced irrigated hillsides, or else sown broadcast in the forest clearings. "Floating rice" is an aquatic species cultivated on certain alluvial plains, mostly inundated. It grows on the surface of the water, and its stem may be many metres in length. The harvesting is accomplished by means of boats.

The Government has undertaken and is now carrying through important agricultural water works calculated to assure the future success of rice culture, and also to encourage its extension.

The cultivation of maize has developed very rapidly within a few years in Indo-China. In 1904, 114 tons were exported, and in





FIG. 35. — The Nam-Kham river at Luang-Prabang.

Photo *Dépêche Coloniale*.

1913 there were 134,000 tons. The figures average about 88,000 tons a year, and the grain is grouped in three principal varieties, Tongking, Annam, and Cochin China, some of these being produced from mountain varieties.

The coffee tree is extensively cultivated, chiefly in Tongking, where the planters have given their attention to *Coffea arabica*. In Cochin China and in Cambodia *Coffea liberica* is cultivated, being better adapted to the climate. The Arabian coffee tree, contrary to what is true in other localities, suffers much less there from *Hemileia vastatrix* than from the "borer". This latter pest, however, is not likely to interfere with successful cultivation in the future. For the Southern planters *Coffea robusta* commends itself at present, and is accordingly cultivated. Tongking coffee commands good prices in the market on account of its flavour when it has been carefully grown and prepared. The annual amount exported exceeds 200 tons.

The teas from Annam and Tongking, are chiefly grown on native plantations, and the need of developing this culture is clear when it is remembered that Indo-China imports, annually, about 1,500 tons for local consumption. In 1911 the wine exports amounted to 539 tons.

The pepper tree is also cultivated, principally on the shores of the Gulf of Siam in the provinces of Hatien and Kampot, and in the island of Phu-quoc. Black and white pepper are prepared. The over-production of 6,000 to 7,000 tons lowered prices a few years ago, but the beneficial restoration of the Customs Duty on all over 2,500 tons reduced the quantity exported in 1913 to 4,179 tons, which still exceeds the demand of the Metropolis.

Since the Brussels Convention the production of sugar has fallen off, and the quantities exported have dropped to a few thousand tons chiefly consigned to China. The sugar cane, which is cultivated only by the natives, is the "little cane" of China, very rich in sugar, but not very juicy, and not giving its full yield, owing to the still primitive methods of extraction.

The tobacco plant is cultivated in all the inhabited parts of the country, but wholly for home consumption. It varies greatly in quality, and the plants growing on old forest soil are reputed the best. The cultivation on a larger scale, with approved methods, and with well selected varieties, would undoubtedly give remunerative results.

Silk-worm culture develops from year to year, thanks to official encouragements, which include bonuses on exports and the free distribution of more than three millions of selected hatchings of silk-worms per annum. The mulberry tree is cultivated in several varieties of Eastern Orient, especially on alluvial river soils.

The long list of native plants includes among the esculents : manioc (sweet and bitter); arrowroot, soya, taros, yams, sweet potatoes, peas, beans, etc., in numerous varieties.

Among the oil yielding products the *coconut* is found in Annam and in Cochin China; the statistics for 1913 show 5,645 tons of copra exported. There are about 30 varieties. The *ricinus* (castor oil plant), the earth nut and sesame are cultivated in different places, as well as the *Camellia drupifera*.



Photo Dépêche Coloniale.

FIG. 36. — Birmane dedler.

Of cultivated tinctorial plants, *indigo* alone remains, though it is more and more threatened. On the other hand, the wild forest tinctorial plants are numerous, and one of them, the *cunao*, is the staple of an important trade with Tongking and North Annam.

The aromatic plants cultivated for trade purposes are *citronnelle*, *lemon-grass*, and *ylang-ylang*.

The products obtained from the cultivation of plants used in the manufacture of stimulants include the *areca* nut and the *betel* nut, chiefly home consumed. The wild cinnamon, grown in the mountains of Annam, is the *Cinnamomum cassia*, or China cinnamon, in which there is a good export trade with China,



certain of its superior qualities securing for it extraordinarily high prices. Some vanilla is grown. Cacao is not cultivated, though in many parts of the South the conditions are highly favourable to its growth. Several different kinds of *cardamoms* are harvested, either as wild crop in the forest lands, or as a cultivated crop.

The anise seed plant (*Illicium verum*), which yields the essence of aniseed or Indian anise, is a special product of North Tongking. The camphor tree, formerly common in the plantations of Tongking, is well nigh exterminated; its cultivation is now contemplated in other parts of the territory with every chance of success. The lacquer tree (*Rhus vernicifera*) is also cultivated in Tongking, the latex rivalling that obtained in Cambodia from *Melannorhea laccifera*. Tongking also produces China wood oil, a wood oil obtained from almonds (*Aleurites cordata* and *A molluccana*), also sometimes cultivated as shade trees in the coffee plantations.

It would take too long to enumerate here the many cultivated species of fruits and edible plants forming part of the native utilitarian flora, nor is it possible to do more than indicate the existence, among the spontaneous flora, of plants useful in commerce such as benzoin, gamboge, stick-lacquer, gums, copals, resins, wood oils, rattans, dye woods, etc., which form part of the richly varied forest flora, sold for profit by the mountain tribes of the interior.

There must, however, be added to the above some particulars, necessarily brief, relative to the production of rubber and textiles, which are the special object of the Exhibition in London.

The cultivation of rubber in Indo-China dates back 48 years. The first commercial undertakings were those made with the wild creepers, numerous species of which are found in the forests of the Peninsula from north to south. These creepers, belonging mostly to the family Apocynæ, are chiefly species of the genera *Ecdysanthera*, *Metodinus*, *Parameria*, *Parabarium*, *Xylinabaria*, *Chonemorpha*, *Micrechites*, *Bousigonia*, etc., and give a product possessing good "nerve", but whose good name was almost ruined by the cupidity of the native gatherers—as is generally the case everywhere—by their adulterations with other latex.

The third part of Indo-China in the south, comprising Cochin China, Cambodia, a part of Laos and of Annam, offers excellent conditions for the cultivation of rubber trees, and there are established, and continue to be established, fine plantations now approaching the period of full bearing. The region of the *laterites* or "red lands", is specially favourable, from the point of view of climatic and soil conditions. The merit of the remarkable financial effort realized in these splendid enterprises goes to the local French colonists. All the plantations are cultivating the *Hevea*; some are



Fig. 37. — Map of Indochina.

endeavouring to add the *Manihot dichotoma* and the *M. pyauhensis*. The *Manihot Glaziovii* and the *Castilloa elastica* are abandoned.

The *Hevea* not finding in the north the conditions favourable to its cultivation—normally its northern limit must seemingly not be beyond the parallel 15° N. latitude—certain planters in Tongking have been trying the *Ficus elastica*. It has certainly a less remunerative yield, but it finds in these parts conditions that can be compared with those in Assam.

In 1913 the amount of rubber exported was 214 tons, and this quantity will rapidly increase in the statistics that will follow.

The group of plants producing wool or textile fibres comprises several species both cultivated and wild.

The *cotton plant* is only cultivated by the natives, especially in the two centres of production, in Cambodia and in Than-hoa (Annam), the first producing a variety of curled cotton very much sought after by the weavers of Japan, and the second a short silk cotton bought by the Chinese. In 1913 the exports were 3,434 tons of cotton wool, and 6,459 tons of cotton not ginned. This culture is destined to increase with the progress of agricultural hydraulic installations.

The enterprise in both cultivated and wild *Kapok* increases. The *Eriodendron anfractuosum* is found in the South, and the *Bombax Ceiba* in the North.

*Jute* (*Corchorus olitorius* and *C. capsularis*) as well as ramie (*Boehmeria nivea* and *B. tenacissima*) are cultivated by the natives. Plantations of *Agaves* are worked by Europeans in Tongking and in Annam.

In conclusion the following is a list of the principal species, spontaneous and cultivated, to be noted as growing in Indo-China :

A. *Cottons*, cultivated. *Kapok*, cult. and spont. *Coconuts*, Coir, cult. *Dicksonia barometz* or Kimas, fern fibre, spont. *Wrightia mollissima*, seed wool, spont.

B. *Jute*, cult. *Ramie*, cult. and spont. *Agave*, cult. and spont. *Manilla hemp*, cult. experimental. *Bananas*, wild and cult. *Pine-apples*, cult. *Hemp* (*Cannabis indica*), cult. *Callotropis gigantea*, spont. *Crotalaria*, several varieties, cult. experimental. *Sansevieria*, several varieties, cult. experimental. *Abroma augusta*, spont. *Fourcroya gigantea*, cult. experimental. *Abutilon indicum*, spont. *Sida Carpinifolia*, spont. *Hibiscus tiliaceus*, spont. *Theopesia populnea*, spont.

C. Various products, palm fibres, fibres from bractea and piassava (*Caryota urens*; *Livistona sinensis*; *Corypha*, *Nipa*, *Chamaerops*, *Borassus Licuala*, etc.), the bark of the *Antiaris toxicaria*, the *Sterculia* and sundry creepers, etc.

Indo-China possesses abundant raw materials suitable for the



manufacture of paper pulp—several species of *Daphne* and *Brousso-*  
*netia*, whole tracts of *Streblus asper*, of *Calophyllum*, and immense  
areas covered with grass (*Imperata Koenigii*) and with bamboo.



Photo Dépêche Coloniale.

FIG. 38. — Bôt of the wat Rachabophit to Bangkok.

The profitable cultivation of such varied resources increases  
from year to year, as is proved by the figures given in commercial  
statistics, according to which the export trade has more than trebled  
during the last 15 years.

## B. — French Settlements in India.

The total of the General trade in the french settlements in India reached, in 1913, the highest figure of the last sixty years viz : 54,557,210 francs. The total of the export comes in for 43,720,095 francs.



Reproduct<sup>on</sup> interd<sup>ct</sup>

Fig. 39. — Map of French Settlements in Indian.

The geographical and economic situation of this territory is such that native products account for only 10,993,065 francs. The greater part of the provisions and merchandise being reexports and in transit.

## VI. FRENCH SETTLEMENTS IN AMERICA.

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### A. — Saint-Pierre and Miquelon.

The general trade of Saint-Pierre and Miquelon amounted in 1913 to a total figure of 10,585,543 francs, of which 6,201,798 francs went for exports.

Of this last figure 5,590,187 francs are represented by fishing products, detailed as follow ; *salted-cod* (morue verte), 9,759 tons, valued 5,074,685 francs, *dried-cod* 599 tons, value 383,416 francs, *herrings* and *micellaneous* 231 tons, value 80,624 francs *rogues de morue (bait)* 163 tons, value 80,624 francs, *cod-liver. cod-liver-oil*, 89 tons value 24,272 francs. *Canned fish, lobsters, etc.*, 1,431 kilos value 4,618 francs. An important part of the dried cod is exported to the french colonies (456 tons) and to Canada (70 tons).

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### B. — Antilles.

#### GUADELOUPE AND MARTINIQUE.

Martinique and Guadeloupe are essentially agricultural countries. The climatic conditions and the geological constitution of the soil, mostly made of decomposed volcanic elements, are favourable to the tropical cultivation up to an altitude of nearly 1,000 metres.



The yield of these old colonies steadily decreased during twenty years, until 1910, when the commercial activity revived in a remarkable way, after having shown in 1909, the extreme minimum of the last sixty years for the trade of Guadeloupe.

In 1913 the trade of Guadeloupe amounted to a total figure of 38,462,419 francs ; and that of Martinique to 51,041,129 francs ; showing respectively a decrease of 7,145,999 francs and of 1,002,627 francs on the figures of the preceeding year.

### THE GUADELOUPE.

The total of the export trade reached 18,287,489 francs in 1913.

Of these exportations the products of the *sugar cane* take first place in importance. In 1913 the exports of cane sugar reached a total of 27,000 tons metric, with a value of 7 millions of francs. This shows a decrease in comparison to the years 1904 and 1905 which showed a production of 36,000 and 28,000 tons respectively. But this decrease is easily accounted for by the competition of the beet sugar in Europe.

At present the planters are selecting better varieties of cane, and giving more care to the process of extraction than ever before.

The *molasses* shipped come to 595 tons with a value of 82,467 francs.

The *rum* shipped in 1913 reached 10,000 tons with a value of 3,971.333 francs, a figure which is over three-fold more than that of 1905.

The cultivation of the *coffee-tree* is chiefly practised in the country of medium altitude, that is to say 200 metres above sea level, and it has not yet reached the development that it might acquire as additional to that of the cane. The kind cultivated is the Arabian coffee-tree the " Liberia ", being used solely for the purpose of grafting. In 1913 the colony has exported 1,381 tons of coffee in beans with a value of 3,667,601 francs, figures higher to those of the year 1905.

The cultivation of the *cocoa-tree* has been steadily increasing during twenty years. It has developed chiefly in Guadeloupe itself.

The statistics of 1913 show an export of 948 tons of cacao beans with a value of 1,682.232 francs ; this quantity is some hundred tons larger than the export of the preceeding years.

Amongst the aromatic plants and spices, the *nutmegs*, *peppers* and *clove* were exported in small quantities and together with cinnamon, the production of which is steadily increasing, has reached 7,086 kilos with a value of 5,240 francs.

The *vanilla* and the *vanillon* which are cultivated in “ Basse-Terre ” vary greatly in quantity from one year to another ; in 1899 there was exported 24 tons and in 1913 20 and a half tons with a value of 400,696 francs.

The business of fruit growing which has obtained such a rapid development in the neighbouring foreign colonies, is not yet quite so prosperous as one could wish, although a notable progress has been made. In 1913 the exportation of bananas was 11 tons worth 1,331 francs ; the *agrumes* 228 kilos with a value of 49 francs, fresh *pine-apples* 318 kilos value 439 francs and *canned pine-apples* 46,869 kilos with a value of 83,313 francs. The *cocoa-nuts* represent 10,640 kilos value 575 francs.



FIG. 40. — Basse-Terre.

The cultivation of the *cocoa-nut tree* for the production of the coprah does not seem to be likely to reach any considerable development.

The starch producing vegetables such as yams, sweet potatoes, choux-caraïbes (youtea), manioc, arrow-root are chiefly used for the local consumption and small quantities of *tapioca* and *arrow-root* appear among the export.

The traffic of the *dyeing plants* is rapidly decreasing.

The prepared *rocou* gave in 1913, 61 tons with a value of 24,418 francs

The woods for *cabinet making* show an export of 59 tons, value 5,897 francs.

Among the other products worth of notice, the *volatile oils* and the *essences* come in for 1,039 kilos, value 16,429 francs ; the

*liquid citric acid* for 317 kilos value 3,030 francs and the woven work, matting and the straw for hat making show 1,200 kilos value 7,200 francs. Among the cultivation in which Guadeloupe could give a certain development are tobacco and the plants for perfumery purposes.

### THE MARTINIQUE.

The export trade of Martinique for 1913, shows a total figure of 28,896,814 francs, an increase over the statistics for the years anterior to 1884; nevertheless, this total is greater than that of the



Photo JUVANON.

FIG. 41. — Fort de France.

year 1904. the inferiority of which is accounted for by the damage caused to the island by the St. Pierre earthquake of 1902.

As in Guadeloupe, the *sugar-cane* is the main agricultural wealth of the island.

In 1913, Martinique exported to the mother-country 40,138 tons of raw sugar, with a value of 12,325,651 francs, and 18,823 tons of rum, with a value of 12,093,095 francs.

The increase of rum is particularly important showing a difference of 75 0/0 in 1913 over the yield of 1905.

In order of importance the cultivation of the *cocoa-tree* comes next, with an export of cocoa in beans of 525 tons, with a value of 1,071,033 francs.

The *coffee* in beans appear in 1913 with 10 tons value 26,789



francs; this relatively small quantity demonstrate that the commercial denomination of " Martinique " coffee is wrongly applied to that of Guadeloupe.

The *vanilla* shows an export of 3,259 kilos with a value of 76,373 francs.

The *cinnamon*, 1,935 kilos, value 1,264 francs.

The production of fruits shows, in 1913, 7,868 kilos of *lemons* and *oranges* value, 1,413 francs ; 69 tons of *bananas* value 10,134 francs ; 21,950 kilos of fresh *pine-apples* value 15,077 francs and 750 kilos of *kola-nuts* estimated 1,800 francs. There again the trade of fresh fruits is far from having the importance that it could have on the French markets.

The *casse*, husk of the *cassia fistula*, represent 10 tons, with a value of 1,165 francs.

A noteworthy commerce exists in *live cattle*, preserved meat, fresh meat, lard etc., as well as *hides*, of which 189 tons are exported valued at 147,758 francs, also 5 tons of small skins with a value of 6,000 francs.

The cultivation of *cotton* has been the object of interesting trials in Martinique and Guadeloupe.

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## C. — French Guiana.

### GEOGRAPHICAL AND GENERAL.

GUIANA is a large country, stretching on the one hand between the 3rd and 8th degree of North and South latitude, and on the other between the 53rd and 64th degree of West longitude (1). It is bounded on the north by the river Orinoco and the Atlantic Ocean, on the east by the Ocean and the mouth of the Amazon river, on the west by the Rio Branco and Rio Negro, and on the south by the Amazon. Guiana is divided from the north-west to the south-east in unequal parts, according to the treaty of 1815, into British Guiana, Dutch Guiana, French Guiana and Brazilian Guiana.

The French portion lies towards the south and east, occupying about half of the territory. The coast line, measuring about 320 kilometres in length, lies between the mouth of the river Maroni,

which separates it from Dutch Guiana, and Cape North, the northern boundary of the Republic of Brazil. The total superficial area may be placed at 77,000 square kilometres.

Generally speaking, the coast of Guiana is low and marshy. A little way off the coast, ranging from south-east to north-west, is a series of islands : the Grand and Petit Connétable, the islets of Remire, the *Enfant perdu*, and the islands of Salut and the *Iles vertes*.

Three chains of mountains traverse Guiana in the undisputed territory, lying parallel to the coast from the Oyapock to the Maroni, viz. ; the Tumuc-Humac, from 400 to 800 metres high, including the groups of the Lorquin Cimotakem, Tapurang-Mannaocée, the peak of Crevaux, the mountains of Tayaouaou, Ourouaitou, Ttire, etc. ; secondly, the central chain, comprising the French mountains, the Magnetic mountain, Le Blond mountain, the Emerillons, Mount Etoupa, etc. ; and thirdly, the coast range, from 80 to 300 metres high, including the Iron mountains, the Monkey mountains, the Condamine, Mounts Macouria, Sparouna, Pelée, Kawo, Approuague, etc.

The river Maroni rises in the Tumuc-Humac mountains, as well as the Oyapock. All the other rivers take their source in the central chain. After the Oyapock and the Maroni, the chief rivers are : the Oouanary, the Approuague, the Kaw, the Mahury, the Cayenne, the Macouria, the Kourea the Sinnamary, the Iracoubo, and the Mana. They all run from south to north, where they empty themselves direct into the Atlantic Ocean, after receiving a more or less large number of tributaries, called creeks.

According to the last census, the number of inhabitants is about 35,000. The civil population number 21,806, male and female, the proportion in most districts being 12 men to 10 women, although the proportion of women to men at Cayenne is lower to the extent of 3 per cent.

Apart from the civil population, the inhabitants may be divided as follows :—

Military and naval	..	..	868
Native Indians	..	..	1,885
Penal population..	..	..	6,290

The most populous district is that of Cayenne, where the civil population reaches 11,896,

### CLIMATE.

The year is divided into two seasons—the dry season and the wet, or winter season. The temperature varies between 30° and





32° cent. at the extreme, and the mean temperature of the coolest month is about 25° ; that of the hottest month of the summer about 27°. It is therefore a mild climate tempered by the sea. The months of January and February are the coldest, and August and September the hottest. From July to December the prevailing winds are those of the south-east (south-east trades). These winds come from the South Atlantic and cross Eastern Brazil and the Tumuc-Humac Mountains, in which they lose nearly all their humidity. These are the dry winds, and their period corresponds with the dry season—the height of summer. Towards the end of this season the winds begin to come from the north-east (north-east trades), and they prevail the whole season from December to April, and are accompanied by light and irregular rain. Towards February and March, when the sun has passed its zenith, the rains are broken by two or three weeks of fine weather—and this is the lesser summer. It is only in April, when there are both north-east and south-east winds, that the real rainy season begins, lasting till June or July. The average rainfall in Cayenne yearly is from 3m. to 3m. 50, and in the wooded regions from 4m. to 4m. 50. The rain falls irregularly and not at stated periods.

During the rainy season the barometer is generally maintained at about 764 to 768 m.m., and in the dry season it rises to 772 to 773 m.m.

There is a great deal of moisture during the whole year, the hygrometer often indicating 95° to 97°.

The longest day, June 22nd, is 12 hours 19 minutes long, and the shortest, December 22nd, 11 hours 42 minutes.

Meteorological casualties are very rare in Guiana, if one excepts the too abundant rains and exceptional dryness.

## POLITICAL GEOGRAPHY.

Guiana was discovered in 1498 by Christopher Columbus, and was explored for the first time in 1500. Since that time many expeditions have been organised, and the foundation of Cayenne dates from one of these in the year 1635. After many vicissitudes, Guiana was attached to the Crown of France in 1674. Many attempts were made to establish agricultural settlements there. Different circumstances, such as the abolition of slavery and the discovery of the diggings, hurried on the economic development of the country. At the present moment Guiana is administered by a Governor, assisted by a Privy Council, which consists of the chiefs of the interior, judicial, penitentiary, and military administrations,

as well as two prominent inhabitants proposed by the Governor and appointed by Decree of the President of the République. The seat of administration is at Cayenne, the chief city, a seaport on the Atlantic.

From an administrative point of view, French Guiana is divided into 14 communes, each governed by a Mayor, as officer of the Civil State, assisted by a Municipal Council.

The Council General, sitting at the capital of the colony, is composed of 16 members elected by universal suffrage. French Guiana is a penal settlement.

### MEANS OF COMMUNICATION.

Up to the present Guiana has only one port, Cayenne, which, unfortunately, has a great many drawbacks of a kind that hinder navigation. The port of Cayenne is in direct communication by several lines of steamers with France, the United States, Venezuela, and the neighbouring French and foreign colonies; running to the following French ports: Nantes, St. Nazaire, Marseilles, Havre, Bordeaux and Dunkirk.

The interior communications are by means of canals, and notably the Laussat Canal, which borders Cayenne on the south. There are three principal roads in the interior, viz. :

1. From Cayenne to Mana.
2. From Cayenne to Degrad-des-Cannes.
3. From Cayenne to the Approuague, which is really, however, only a badly-made tane.

Up to the present, French Guiana has no railways.

### MINERAL PRODUCTS.

The most important product of French Guiana is the native gold, which is extracted from auriferous sand and also from layers of auriferous quartz. The exports of gold dust amount to about 10 million francs, and in this form constitute the chief export article of the country. Gold is also exported in the form of auriferous quartz.

Phosphorus in lump form is also exported from the island of Grand Connétable. This particular form of rock is very rich in phosphate of lime and aluminium. One-fourth of the products are sent to England and three-fourths to the United States, where the

aluminium is extracted from the rock, and it is also used for the preparation of artificial phosphates of lime.

Certain quantities of ore and precious stones are also found in Guiana.

### ANIMAL PRODUCTS.

The fauna of Guiana is very rich. There are shrimps, different species of lobsters, mussels and oysters. There are silk-worms at Cayenne, and also wild bees. Fish is very abundant; sharks, dog-fish, torpedo-fish, eels, carp, swordfish, electric eels, soles, etc. The reptiles are numerous, the most common being the carail and the boa-constrictor. Amongst the saurians one may mention the crocodile, large and small species of sea-turtle, the kauane turtle and the common turtle.

The birds of Guiana are among the most beautiful in the world; of the number the following may be mentioned: wild duck (*Anas boschas L.*), frigate-bird (*Trachypetes aquila L.*), the sea-gull (*Larus canus L.*), the teal (*Anas querquedula L.*), the plover (*Chararius Sp.*), the woodcock (*Scolopax rusticola L.*), the snipe (*Gallinago medica grog.*), the Guiana heron (*Ibis rubra veill.*), the grey crane (*Grus cinerea Bachot.*), the water-fowl (*Gallinula chloropus L.*), the white egret (*Herodias alba*), the grey partridge (*Perdrix cinerea Bris.*), the red partridge (*Perdrix rubra Temm.*), the quail (*Coturnis Sp.*), the common turtle-dove (*Turtur auribus Bp.*). There is also a great variety of parrots. The great eagle is likewise found.

Among the mammifers are the porpoise, the opossum, the dolphin, the large ant-eater, the armadillo, the sloth, the ringed peccary, the cougar, the jaguar, the tiger-cat, and the vampire bat. None of these animals are of any particular commercial value.

As a matter of fact, only the deep-sea varieties of fish have a certain commercial value, and of these the exports are about 4,000 kilogs., value 12,000 francs.

### VEGETABLE PRODUCTS.

As was indicated at the outset, agriculture in Guiana is hardly yet fully developed, although there are a great number of plants which could be cultivated successfully, particularly cocoa, coffee, earth-nuts, coconut-palms, rice, nutmeg trees, sesame, Indian kernel, cotton, ramie, bananas, aloes, the vacquois (*Pandanus utilis*), pineapples, various types of hibiscus, the vanilla plant, which is indigenous to Guiana, the cinnamon tree, the pepper-tree,



the clove-tree, the ginger root, the sweet potato, the yam, the arrow-root, castor-oil, maize, tobacco, etc.

Guiana, however, hardly exports more than 20,000 kilogs. of cocoa, to the value of 20,000 francs, and a little more than two million kilogs. of refined coffee, value 4,000 francs.

### FORESTS.

The principal source of Guiana's wealth to-day lies, after gold, in the forests, which are full of precious woods, but which are, unfortunately, not sufficiently exploited on account of the insufficiency of labour and means of transport. The chief products which are actually drawn from Guiana forests are balata and rosewood.

**BALATA** (*Mimusops Balata Gaertn.*). — This is a beautiful tree, much in request for its timber for carpentering and wheel-making purposes, but above all for its latex. There are several varieties of balata ; the true balata, egg-yellow balata, and red balata, all yield a fine wood for building, etc. ; but the red balata (called the "gum-tree") gives besides a latex which, when coagulated, furnishes the product called "balata" or the gutta-percha of Cayenne. Each tree produces an average of 5 litres of milk, but after a complete bleeding of the tree it is necessary to leave it idle for three years : at the end of which time it may be worked again. One kilog. of the coagulated milk is sold in the market for 7 francs. As the production expenses are very low, the net profit on the product is about 200 per cent. One hectare of land well planted will produce every three years 2,500 litres of milk, which, after coagulation, gives 1,700 kilogs., at an average value of 12,000 francs. The annual value of the exports of Balata from French Guiana exceeds 100,000 francs. Guiana also possesses *Hevea* trees, of which, unfortunately, the exploitation is rather restricted.

**ROSEWOOD.** This wood is not very much used in carpentering work because it is not sufficiently tough, but it is very much sought after for domestic furniture and other cabinet-making work. About 1,200 tons of rosewood are exported annually, representing a value of 100,000 francs. The inhabitants of Guiana use rosewood for the extraction of a certain essence employed in the preparation of perfumes. This essence costs from 25 to 30 francs per litre. The value of the wood in its rough state is from 130 to 180 francs per 1,000 kilos ; its cultivation, therefore, is fairly profitable, but the cost of initial installation is great. During the last few years the annual export of essence of rosewood has been 22,000 kilos, value 550,000 francs.

Finally, the annual exports of woods for cabinet making represent a total value of about 100,000 francs.

## VII. FRENCH SETTLEMENTS IN OCEANIC.

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### A. — New Caledonia.

#### GEOGRAPHY AND GENERALITIES.

The island of New Caledonia, the most important of the French possessions in the Pacific Ocean, is situated in the occidental part of this ocean, and in the Australasian hemisphere.

New Caledonia is 1445 kilometres from Australia. To the north-west are the neighbouring small islands, Chesterfield and Huon, which are also French. To the north-east lies the archipelago of the New Hebrides; to the south, the coral sea, where lies the small Norfolk island, belonging to England.

The distance from New Caledonia to New Zealand is more than 1,555 kilometres.

New Caledonia looks like a spindle, or distaff, in shape, lying from north-west to south-east, between latitudes  $20^{\circ} 10'$  and  $20^{\circ} 26'$  south and in longitude  $161^{\circ} 30'$  east of Paris.

The total area is 19,823 square kilometres.

The island is distinctly mountainous in character, the highest peaks being: to the north, the Panie peak (1,642 m.); to the south, Mount Humboldt (1,634 m.); to the north of Noumea, Mount Vincent (1,445 m.); to the east of Boulopari, Mount Owen (1,319 m.) between Mount Humboldt and Noumea. In the centre the Table-Ronde (1,008 m.), which is to the west of Canala.

The island is supplied with water by a fair number of rivers, none of which, however, are important.

The coast is very much indented and surrounded by a belt of





coral reefs. To the north the island terminates in a peninsula, on the partially detached island of Pounie, with the outlying islands of Neba Jandè and Boualabio.

There are numerous bays along the coast, the most important being that of Noumea, covered by the island Nou.

The total population of New Caledonia is 54,415 souls; this figure comprises :—

- 12,253 individuals of the free population.
- 740 military.
- 10,506 in the penal settlements, and.
- 30,916 natives.

The capital of the island, Noumea, has a population of 7 854, amongst which are 5,114 individuals of the free population, 461 military, and 1,362 in penal settlements.

The island is inhabited by Papous, Polynesians, and numerous other races.

### CLIMATE.

The climate of New Caledonia is temperate and very healthy.

The south-east winds prevail for a part of the year.

The year is divided into two seasons : the hot season, from December to the end of March, the average temperature of which is 26°; and the fresh season from May to October, when the temperature averages 26° to 21°. The rains are especially abundant in the months of January and February, which is a period of heat. In October, and sometimes in January, there are long periods of dryness. Hurricanes and cyclones are very frequent.

### POLITICAL GEOGRAPHY.

New Caledonia was discovered in 1774 by Cook, and annexed in 1853. It was first placed under the authority of the Governor commanding the station of the Pacific, who resided at Tahiti; in 1860 it was constituted a commanding station, and in 1863 a distinct government. The Governor resides at Noumea, the capital of the island. He is assisted by a General Secretary, and five Colonial Directors, who are placed over the five districts of Noumea, Canala, Honailon, Taoho and Ouigoa. New Caledonia is also represented by a delegate to the superior council of the colonies.

A certain number of islands are attached to New Caledonia. It is sufficient to mention the following :—



FIG. 44. — Spiritu Santo.

Photo *Dépêche Cotonnière*.

Iles des Pins (Island of Pines).  
Iles Loyalty (Loyalty Islands).  
Iles Huon (Huon Islands).  
Iles Chesterfield (Chesterfield Islands).  
Iles Wallis (Wallis Islands).  
Iles Horn (Horn Island).  
Iles Clipperton (Clipperton Islands).

### MEANS OF COMMUNICATION.

There is a regular service of packet boats belonging to the Messageries Maritimes, which run between Marseilles and Noumea.

There are sailings every 28 days, and the journey occupies 45 days.

In the interior of the island there is a railway running from Noumea to Bourail, and an automobile service between Noumea and Moindron.

The rivers of the interior are also utilised for transport.

Navigation, around the coasts, is not difficult on account of the belt of coral reefs surrounding the island.

The Messageries Maritimes run a regular service between Noumea and the New Hebrides, and, besides this, the " Union Commerciale et de Navigation Caledonienne " insures the postal services between New Caledonia, Pine Islands, and Loyalty Islands.

### MINERAL PRODUCTS.

The main riches of New Caledonia are to be found in its deposits of nickel ore, chrome iron ore, manganese, copper, antimony, and red sulphide of mercury. Deposits of gold are not uncommon. However, a great part of these riches are unexploited. The deposits of nickel and chromium are actively exploited. Cobalt is equally exploited. The annual exportation of these minerals, and of high grade nickel ores amount to about 5,000,000 francs. Labour, however, is scarce for the exploitation of these rich deposits.

### ANIMAL PRODUCTS.

One of the chief industries of New Caledonia is the canning of meat, the export amounting to 5,000,000 francs annually, representing 500 tons ; in round numbers 400,000 hectares have been





FIG. 45. — Wharf of Noumea.

Steuo. Dépêche Coloniale.

converted into pasture or grazing lands, on which oxen, sheep and goats propagate very well. Oxen, especially, are reared, and more than 300 tons of raw hides are exported annually, worth 200,000 francs: Pigs are equally plentiful. Among other animal products we must mention tortoise shells, guano, of which 5,053 tons were exported in 1910, worth 350,000 francs, and the products of fisheries, such as mother-of-pearl and other shells (Holoturries).



Photo *Dépêche Coloniale*.

FIG. 46. — Coffee Gathering.

## VEGETABLE PRODUCTS.

Coffee is the most important crop in New Caledonia, and is at present in full activity, the annual export being over 1,000,000 francs in value. The variety cultivated most is the *Coffea arabica*, and two varieties of the "Reunion" called "Café du Pays" and "Leroy pointu."

The cultivation of cotton is increasing. The present exports amount to about 12 tons per year.

Certain aromatic plants are also cultivated, such as the cinnamon, vetyver (Indian aromatic plant, the roots being very odorous).

Copra is, next to coffee, the most important product.

In conclusion, the natives cultivate rice, manioc (American shrub, the roots of which are used to make a kind of bread), many varieties of ignames (a species of tubers belonging to the family of artichokes, Indian in origin), and especially the “ taro tuber,” produced by plants of the Araceé family and very much appreciated in the different islands of Oceania

European vegetables grow well, and are exported in small quantities.

### FORESTS.

The Niaouli, Sandal and Dammara trees are especially exploited. The Niaouli (*Melaleuca Leucadendron*) is used for the production of an essence, the export of which is more important than that of the cinnamon and vetyver (Indian aromatic plant).

The Sandal wood tree (*Santalum ostrocaledonicum*) furnishes a wood becoming more and more scarce, and commands fairly high prices.

The Dammara produces a resin called “ Kaori,” which is often collected in a semi-petrified state.

Mushrooms are collected, from old tree trunks, to the extent that they are exported to Australia in rather important quantities.

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## B. — The Oceanic French Settlements.

The general table of trade registered in 1913, 20,584,981 francs, of which the exports were 11,684,507 francs. This figure is the highest recorded up to the present time.

First among the native products exported from the territory comes *coprah* with 8,842 tons at a value of 4,389,623 francs, a figure far superior to that of the year 1903. The greater part of this coprah is *sun-dried*.

The value of Coco-nuts exported amounted to 123,223 francs.

The cultivation of *vanilla*, introduced from Manilla in 1848, has been progressively developed. In 1905 the export was 120 tons and in 1913, 194 tons, with a value of 4,032,507 francs. The Tahiti vanilla is characterized by a hellotrope scent and does not congeal.





The cultivation of *coffee-tree* remains without any commercial importance. On the contrary that of *cotton*, once very flourishing, and later neglected, is once more developing : and the statistics of 1913 registered an export of 26 tons of raw cotton valued 46,104 francs.

*Orange* and fruit trade with New-Zealand is fairly good; the export amounted to 83.059 francs.

*Mushrooms*, the export was 10 tons, estimated 10,000 francs. Also there was exported 8,443 francs of *bamboo straw* and over 3 tons of raw *wax* estimated 7,117 francs. Timber trade is not worth of mention.

Among the fishing products, *mother of pearl*, wich in the export trade comes next in importance after coprah and vanilla amounted in 1913 to 465 tons with a value of 934,818 francs coming chiefly from Gambier islands and Tuamotu fisheries, the only places where necked diving is authorized. Are also exported for some thousands of francs each la *biche de mer*, and *shark fin*.

Deposits of *phosphates* have been recently discovered. The export in 1913 amounted 82,057 tons with a value of 1,641,134 francs.

Presumably the opening of the Panama Canal, by favoring the commercial relations with Tahiti, will exercise positive influence upon the economic development of the principal centres of production of the Archipelago.

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